Chronic dyspepsia pain in general practice – its causes and diagnosis

P. Lance¹*, S. Gibson-Glubb², J.A. Gazzard² and B.G. Gazzard¹

¹Westminster Hospital, London SW1P 2AP and ²Huitt Square, Winstanley Road, London SW11, UK.

Summary: One hundred consecutive patients who had consulted their general practitioner because of upper abdominal pain related to eating, were investigated after initial interviews by the general practitioner, a medical registrar and the same consultant physician. Thirty seven had active upper gastrointestinal or biliary tract diseases, including 29 with peptic ulcers. The general practitioner and consultant correctly distinguished between organic and non-organic dyspepsia (NOD) in 51 and 65 cases respectively. Although the sensitivity of the general practitioner diagnosis of organic disease was high (95%), the specificity (23%) and predictive value (42%) were low.

There were fewer organic diagnoses amongst the patients under the age of 30 ($P < 0.05$) and those with symptoms for less than 3 months ($P < 0.01$). No patient under 30 with symptoms for less than 3 months had organic dyspepsia. We suggest that if dyspeptic patients over the age of 30 and those under 30 with symptoms for longer than 3 months are investigated, about one-third will be found to have organic diseases.

Introduction

Abdominal pain in an otherwise healthy patient is the commonest gastro-enterological problem for general practitioner and hospital doctor alike. Many of these have upper abdominal pain related to eating (dyspepsia). The over-riding practical problem is to distinguish those patients with a significant organic disease such as a peptic ulcer, from the remainder.

Most surveys of the causes of abdominal pain have concentrated on selected patients referred to hospital. Barnes *et al.* (1974) studied 50 consecutive patients with dyspepsia attending an urban practice in Gloucester and identified a specific lesion of the upper digestive or biliary tracts in 30. The number of patients with organic disease was considerably higher than they had expected.

The double contrast barium meal and fiberoptic endoscopy have improved diagnostic accuracy, but with certain exceptions, such as the patient over fifty who has recently developed dyspepsia, it is not clear which patients should be investigated. The diagnostic yield may be very low; Mead *et al.* (1977) found that only 10% of all patients under 30 y, and 10% of those under 50 y with symptoms for less than 1 y, had an abnormal barium meal.

We decided to study prospectively a series of patients presenting to their general practitioner with abdominal pain. The aims were to assess the frequency of the various causes of dyspepsia in an unselected series of patients to see how successfully the general practitioner and hospital doctor distinguished organic and functional dyspepsia and to improve the selection of patients requiring investigation for suspected organic disease.

Patients and methods

Consecutive unselected patients from a population of 7,100 who consulted a single South London general practice because of dyspepsia were studied. Dyspepsia was defined as upper abdominal pain relieved by meals or caused by eating. The pain could be continuous or intermittent. Patients requiring emergency referral to hospital were not eligible. The purpose of the study was explained to each patient who was given the option of being referred to the clinic in the normal way. The general practitioner gave a provisional diagnosis for each patient, who was then transferred to hospital regardless of whether or not a specialist opinion would normally have been sought. They were interviewed and examined independently and without knowledge of the general practitioner's opinion by the same consultant physician (BGG) and a medical registrar. Deliberately, there was no previous attempt

Correspondence: B.G. Gazzard, M.D., F.R.C.P.

*Present address: Division of Gastroenterology, Brown University, Department of Medicine, Roger Williams General Hospital, 825 Chalkstone Avenue, Providence, Rhode Island, 02908 USA.

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amongst the doctors concerned to standardize methods of diagnosis. The provisional diagnosis of each doctor was recorded on sheets which were kept by an independent third party. One of us (PL) examined and endoscoped those patients who consented the same day, booked a double contrast barium meal for the others, and organized further management as though the patient had been referred to the clinic in the ordinary way without reference to the other doctors' opinions. Non-organic dyspepsia (NOD) was diagnosed for patients whose investigations were negative, including those with pain relieved by defaecation, which was thought to be associated with a disordered bowel habit typical of the irritable bowel syndrome.

The provisional diagnosis of general practitioner, registrar and consultant were classified as correct and depending on whether or not organic and non-organic dyspepsia were accurately distinguished as false positive or negative with regard to organic disease. The series was analysed for the frequency of NOD, the specific causes of organic dyspepsia and the diagnostic accuracy of the doctors involved. The *t* test was used to compare the average ages of the organic and NOD groups. Fisher's exact test was used to compare the numbers of patients in different sub-groups.

Results

One hundred and eight patients attended the practice with dyspepsia in 13 months, of whom only 8 defaulted from or declined to take part in this study. Of the remaining 100, 61 were male (average age 39.8 y) and 39 female (40.8 y). The proportion of different ethnic

groups was similar to the practice as a whole with 68 being British or Irish, 24 West Indian, and 8 from other countries.

Ninety three patients were endoscoped and the remaining 7 had a barium meal. If there was a doubt in the endoscopist's mind as to the accuracy of the endoscopy findings, a barium meal was also carried out (37 patients) and in each case this confirmed the result of the gastroscopy. In 46 patients an oral cholecystogram and in 9 a barium enema was performed as it was felt to be clinically indicated by the medical registrar (PL). Details of the diagnoses, sex distribution and ages of the patients are shown in Table I. Of the 29 with peptic ulcer disease 22 had duodenal ulcers, 5 benign gastric ulcers and 2 had both gastric and duodenal ulcers.

The accuracy with which general practitioner, medical registrar and consultant were able to distinguish between organic and non-organic dyspepsia is shown in Table II. Although between 51 and 65 of the patients were correctly categorized, the predictive accuracy of an organic diagnosis was low. The general practitioner tended to over-diagnose organic disease and the consultant under-diagnose it.

The patients with NOD were on average significantly younger than those with organic dyspepsia ($P < 0.005$). Twenty three of the 63 with NOD were aged less than 30 y compared to 5 out of 37 with organic dyspepsia ($P < 0.05$) but there was no significant difference for any age limit above 30 y. The average duration of symptoms was 5.3 y (s.d. 7.2) for patients with organic dyspepsia and 4.0 y (s.d. 6.3) for those with NOD (NS). If a time limit of 3 months or less for symptoms being present was chosen there was a significant difference between those patients with organic dyspepsia (5 patients only had symptoms for less than 3 months) compared with NOD (26 patients; $P < 0.01$). Five of the 15 patients less than 30 y whose symptoms had lasted for more than 3 months had organic disease (4 duodenal ulcers, 1 oesophagitis) but none of the 13 under 30 y whose symptoms had lasted for less than 3 months had organic dyspepsia ($P < 0.05$). Sex distribution, social class and country of origin did not differ significantly between the two groups.

Follow-up of patients with NOD

While this study was deliberately cross-sectional, an attempt was made to confirm the accuracy of the diagnosis of NOD. The case notes of these 63 patients were reviewed between 12 and 18 months following diagnosis. Six were unavailable as they had moved, but none of the rest had developed organic disease related to the gastrointestinal tract over this period although 15 had undergone subsequent investigations.

Table I Details of diagnosis, sex and age

Diagnosis	Number of patients (male)	Average age (s.d.)
NOD	63 (38)	37.1* (14.1)
All organic diseases	37 (23)	45.3 (13.5)
Peptic ulcer	29 (18)	46.0 (12.7)
Oesophagitis	2 (1)	— —
Alcoholic gastritis	2 (1)	— —

1 case each of carcinoma of stomach, gall stones, erosive gastritis and erosive duodenitis.

NOD = non-organic disease

* $P < 0.0005$ compared with all organic diseases

There were no significant differences with regard to the sex and the age of the patients in the various categories.

Table II Accuracy of provisional diagnosis

	Number of patients correctly diagnosed		For a diagnosis of organic disease		
	Non-organic dyspepsia (63)	Organic disease (37)	Sensitivity %	Specificity %	Predictive value %
Consultant	40	25	71	62	55
Registrar	29	26	74	46	43
General practitioner	16	35	95	23	42

Discussion

There have been a few previous attempts to assess the frequency of organic disease in patients presenting to the general practitioner with dyspepsia. It is difficult to justify extensive investigations in a group of patients with minor symptoms. It is possible that the number of patients with gall stones may have been underestimated as only half had a cholecystogram and the follow up at one year was incomplete. Thirty seven per cent of our patients, including 29% with active chronic peptic ulcers, had organic gastrointestinal or biliary tract diseases. Barnes *et al.* (1974) found a similar incidence of organic disease (28% peptic ulcer) except that 8% of patients had gall bladder disease. Twenty four of the 72 patients in our study under the age of fifty had organic disease which is not a significantly greater proportion than the 24 out of the 100 studied by Mead and his colleagues (1977) in Nottingham, although in our series 18 patients under 50 had active peptic ulcers compared to only 10 in theirs ($P < 0.02$). However, peptic ulcers in their study were diagnosed by barium meal and thus the number of patients with organic disease may have been underestimated (Laufer, 1976).

The diagnostic accuracy of all the doctors involved in this study was low although only two patients were incorrectly assigned by the general practitioner into an

NOD category giving a high sensitivity for a positive diagnosis of 95%. This was in part because the number of putative organic diagnoses was erroneously high, producing a specificity of only 23%. In contrast, the sensitivity of a consultant diagnosis of organic disease was lower (71%) as he assigned twelve patients incorrectly to the NOD group but the specificity was greater at 62%. These errors almost certainly work to the patient's benefit. General practitioners should have a high index of suspicion of organic disease and refer accordingly, and the consultant will nearly always investigate a referred patient further.

The extent to which psychoneurotic illness confuses the distinction between organic dyspepsia and NOD is hard to quantify. In this study, symptoms of neuroticism were taken into account by each doctor before making a provisional diagnosis of NOD and the high false negative rates may highlight the diagnostic problem presented by the patient who has both psychoneurotic symptoms and organic dyspepsia.

It is established that any patient who develops dyspepsia for the first time after the age of about 50 y should be investigated because of the risk of malignancy. We suggest that all patients over 30 y and those under 30 y with symptoms for more than 3 months also merit investigations because a third or more of them will have treatable diseases.

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