

Alexithymia is Associated With Gastrointestinal Symptoms, but Does Not Predict Endoscopy Outcome in Patients With Gastrointestinal Symptoms

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Background: Alexithymia, where a person has difficulty in distinguishing between emotions and bodily sensations, is considered to be a character trait and a vulnerability factor for various psychosomatic disorders. Assessing alexithymia in patients with gastrointestinal (GI) symptoms before endoscopy might therefore be useful in selecting patients who are more prone to functional GI disorders.

Goal: To determine whether alexithymia might be a useful factor in predicting GI endoscopy outcomes.

Study: Patients referred for endoscopy between February 2002 and February 2004 were enrolled. They were asked to report alexithymia on the Toronto Alexithymia Scale-20 2 weeks before endoscopy. Information about endoscopic diagnoses was obtained from medical files.

Results: A total of 1141 subjects was included (49% male), of whom 245 (21%) reported alexithymia. There was no difference in mean \pm SD alexithymia scores between patients with (51 ± 12) and without (50 ± 12) an endoscopic organic abnormality at GI endoscopy. When divided into subgroups, according to the most prominent finding at either upper or lower GI endoscopy, there was no association with alexithymia. Patients with alexithymia reported a worse sensation of GI symptoms during the last weeks before enrollment in the study (mean \pm SD symptom severity score: 42 ± 34 vs. 34 ± 30 , respectively; $P < 0.01$).

Conclusions: Alexithymia is not associated with endoscopic findings, and has therefore no additive value in predicting endoscopy outcomes. Patients with alexithymia more often present with a higher number and more severe GI symptoms.

Key Words: alexithymia, gastrointestinal diseases, gastrointestinal symptoms and endoscopy

(*J Clin Gastroenterol* 2006;40:195–199)

In the majority of patients with gastrointestinal (GI) symptoms (40% to 80%), no pathologic cause can be found.^{1,2} Efforts have been made to develop diagnostic tools and criteria for these so-called functional GI diseases that might prevent invasive and expensive diagnostic interventions. It has been shown by Herschbach et al³ that the tendency of patients with functional GI disorders to consult a physician is influenced by personality factors. In addition, many studies have shown that patients with functional dyspepsia are more anxious and depressed than healthy controls and patients with organic GI diseases.^{4–11} However, in a recent study we found that there is no difference in anxiety or depression between patients with functional GI diseases and patients with organic abnormalities at endoscopy before diagnosis.¹² This implies that psychologic distress is merely a result of GI symptoms, rather than an etiological factor.

A condition that has been associated with illness behavior and increased medical consumption is alexithymia. Although very common, alexithymia is a relatively unknown condition in general clinical practice. Alexithymic patients are unable to describe emotions in words, are unaware of what their feelings are and have difficulty in distinguishing between emotions and bodily sensations.¹³ They typically show an emotional coldness and a way of speaking that is only cognitive. This influences not only patient's behavior, but also that of the caregiver. In a study by Rasting et al,¹⁴ it was shown that alexithymia greatly influences affective expression and that the predominant emotional reaction of a therapist to an alexithymic patient is contempt.

Although not absolutely stable, alexithymia is considered a character trait and it has been found to be a vulnerability factor in different psychosomatic disorders such as essential hypertension, irritable bowel syndrome, obsessive compulsive disorder, panic disorder, and depression.^{15–17} Alexithymic patients tend to have a lower life satisfaction in comparison to nonalexithymic

Received for publication June 7, 2005; accepted September 1, 2005.

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Supported by SWOIG, Foundation for Scientific Research Internal Medicine Canisius Wilhelmina Hospital, Nijmegen.

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controls.¹⁸ Recent studies have shown that patients with functional GI disorders are more alexithymic than patients with inflammatory bowel disease and healthy controls.^{19,20}

The assumption that patients with functional GI diseases report higher rates of alexithymia than patients with an organic cause for their symptoms leads to the consideration that assessment of alexithymia before endoscopy might contribute to a reduction in expensive and invasive diagnostic interventions. It was hypothesized that the prevalence of alexithymia is higher in patients without an organic cause for their GI symptoms. Therefore, the objective of this study was to compare alexithymia prevalence rates of patients with and without an endoscopic organic cause for their GI symptoms before diagnosis.

MATERIALS AND METHODS

Subjects

Between February 2002 and February 2004, consecutive patients referred for upper or lower endoscopy to the Canisius-Wilhelmina Hospital in Nijmegen, The Netherlands, were asked to fill out a postal questionnaire 2 weeks before endoscopy. This is a general primary care district hospital. The questionnaire included enquiries on demographic information, alcohol and medication use, the presence and severity of upper and lower GI symptoms, and alexithymia. Information about the endoscopic and histologic findings was collected after completion of the questionnaire. Questionnaires were processed with Teleform automatic scanning software version 6.0 (Cardiff Software Inc, Sunnyvale, CA). All aspects of the protocol were approved by the Medical Ethical Committees of Radboud University Nijmegen Medical Center and the Canisius-Wilhelmina Hospital, both in Nijmegen, The Netherlands.

Alexithymia

Alexithymia was measured using the 20-item Toronto Alexithymia Scale (TAS-20). This is the questionnaire most used to assess alexithymia and has been carefully validated.²¹⁻²⁴ It is a self-completed questionnaire that can be used in a variety of clinical settings. It consists of 3 domains: difficulties in identifying feelings and distinguishing between emotional and physical sensations, difficulties in describing feelings and externally oriented thinking. The scale describes a total of 20 items rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This way, utilities can be calculated that indicate a patient's rate of alexithymia. Alexithymia is defined as a score of more than 60 on the TAS-20.²⁵

Endoscopy

Patients underwent a routine diagnostic upper or lower GI endoscopy. The results were entered into a database. Furthermore, histologic data were obtained from the biopsies taken during endoscopy. These biopsies were analyzed by an experienced pathologist and results

were entered into the same database. For this study, data on the outcomes of upper and lower GI endoscopies were extracted from that database and patients were divided into groups according to their most prominent endoscopic outcome. Patients were defined as having an endoscopic organic disorder if their diagnosis was carcinoma, gastric or duodenal ulcer, reflux esophagitis, hiatic hernia, colitis, polyps, or diverticula. When no explanation for symptoms could be found at endoscopy, they were defined as functional. Patients who underwent an endoscopy in the past 6 months before enrollment were excluded from further analysis.

Symptom Score

Patients were asked to fill out a questionnaire on GI symptoms. This questionnaire included items on GI symptoms. Severity in the last 4 weeks was rated on a 7-point Likert scale (0 = absent and 6 = very severe). Items that were not scored properly by more than 10% of the subjects were not taken into further analysis. A score of 2 or more was regarded as symptom presence. Furthermore, symptom severity in the last 4 weeks was scored on a 100 mm Visual Analogue Scale.

Statistical Analyses

Data at baseline were analyzed by means of frequency tables and descriptive statistics. Age and alcohol use-adjusted regression analyses were performed to determine the odds ratios (ORs) for endoscopy outcomes. Patients with incomplete data were excluded from analysis. Two-tailed *t* tests were performed to compare mean number of symptoms and mean severity scores between patients with and without alexithymia. Statistical significance was accepted at a *P* value < 0.05. Analysis was performed with SAS statistical software, version 8.0.

RESULTS

A total of 1141 subjects was included, of whom 580 (49%) were male. Mean age (\pm SD) was 55 (\pm 15) years. Five hundred patients were referred for upper GI endoscopy, whereas 641 were referred for lower GI endoscopy. Of all 695 patients who underwent previous diagnostic interventions, 495 had undergone a previous endoscopy (Table 1). There were no differences in alexithymia scores between patients with and without a previous endoscopy.

Alexithymia was reported by 245 (21%) subjects and mean overall score (\pm SD) on the TAS was 51 (\pm 12). Subjects who had a score of more than 60 were considered alexithymic but had an equal risk of having an organic abnormality at either upper or lower GI endoscopy [OR 1.0; 95% confidence interval (CI) = 0.7 to 1.6 both]. When divided into subgroups none of the findings at endoscopy was associated with an increased risk for alexithymia (Table 2). Of the socio-demographic factors, alcohol use was associated with a decreased risk for alexithymia (OR 0.49; 95% CI = 0.37 to 0.66) and

TABLE 1. Patient Characteristics

Characteristics	No. Patients (%)
Mean age (years) (SD)	55 (15)
Sex	
Male	580 (49)
Female	561 (51)
Previous endoscopy	495 (43)
Other previous diagnostic intervention*	200 (18)
Upper GI endoscopy	500 (44)
Organic upper GI disease	244 (49)
Functional upper GI disease	256 (51)
Lower GI endoscopy	641 (56)
Organic lower GI disease	148 (23)
Functional lower GI disease	493 (77)

*x-ray or Helicobacter Pylori test.

age > 50 years was identified as a risk factor (OR 1.52; 95% CI = 1.11 to 2.11).

As a result of improperly filled out questionnaires, all enquiries on stools had to be excluded. Sixteen items of the questionnaire were available for further analyses. Alexithymic subjects reported more GI symptoms [mean (± SD) 6 (± 4) vs. 5 (± 3) $P < 0.05$] and higher mean symptom severity scores [42 (± 34) vs. 34 (± 30); $P < 0.01$] in comparison to subjects who were not alexithymic. Patients referred for upper GI endoscopy reported more symptoms [6 (± 4) vs. 4 (± 3); $P < 0.05$] and higher symptom severity scores [42 (± 32) vs. 32 (± 29); $P < 0.01$] compared with patients referred for lower GI endoscopy. Among patients referred for lower GI endoscopy, patients with no endoscopic organic abnormalities reported higher symptom severity scores than patients with an organic explanation for their

TABLE 2. ORs for Alexithymia in Different Endoscopic Findings

	N (%) Alexithymic	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*
Proximal (n = 500)	104 (21)		
Carcinoma	2 (50)	3.86 (0.46–32.49)	3.39 (0.39–29.74)
Ulcer	10 (29)	1.58 (0.70–3.31)	1.58 (0.69–3.40)
Reflux	22 (19)	0.87 (0.51–1.46)	0.89 (0.51–1.49)
Functional	52 (20)	0.94 (0.61–1.45)	0.91 (0.58–1.43)
Other†	18 (20)	0.94 (0.52–1.63)	0.98 (0.54–1.73)
Distal (n = 641)	141 (22)		
Carcinoma	5 (31)	1.64 (0.51–4.58)	1.67 (0.51–4.77)
Colitis	4 (17)	0.74 (0.21–2.01)	0.93 (0.26–2.59)
Polyps	18 (23)	1.03 (0.58–1.78)	1.03 (0.56–1.81)
Diverticulas	3 (23)	1.07 (0.24–3.54)	1.25 (0.27–4.39)
Functional	107 (22)	0.93 (0.60–1.46)	0.87 (0.56–1.39)
Other†	4 (25)	1.19 (0.33–3.47)	1.18 (0.32–3.52)
Smoking	85 (25)	1.0 (0.87–1.13)	0.99 (0.86–1.13)
Alcohol	118 (17)	0.5 (0.37–0.67)	0.49 (0.37–0.66)
Age > 50 yr	68 (17)	1.58 (1.17–2.17)	1.52 (1.11–2.11)
Male	117 (20)	0.86 (0.64–1.13)	1.03 (0.76–1.40)
Previous endoscopy	117 (24)	1.25 (0.94–1.66)	1.12 (0.83–1.50)

*ORs are among disorders of the same part of the GI tract (ie, proximal or distal) and adjusted for alcohol use, age > 50 yr and a previous endoscopy.

†Other organic abnormalities found at endoscopy, for example esophageal varices, fungus, stomach resection.

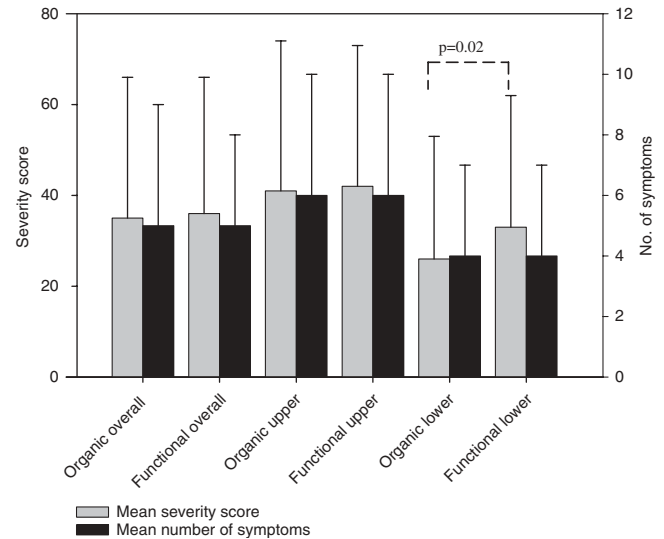


FIGURE 1. Mean visual analogue scale score and mean number of symptoms in patients with and without organic abnormalities at GI endoscopy.

symptoms [33 (± 29) vs. 26 (± 27); $P = 0.02$]. We found no difference in mean number of symptoms between patients with and without an endoscopic organic explanation for their symptoms at both upper and lower GI endoscopy (Fig. 1).

When analyzing each symptom separately, almost all of the reported symptoms seem to be associated with an increased risk for alexithymia, even more after adjustment for age and alcohol use. Patients with hematemesis (OR 3.7; 95% CI = 1.5 to 9.2), abdominal pain (OR 1.8; 95% CI = 1.4 to 2.5), and vomiting (OR 1.9; 95% CI = 1.2 to 3.0) are frequently alexithymic (Table 3). The presence of more than 8 symptoms, of a total of 16, is associated with a more than 2-fold risk for alexithymia (OR 2.1; 95% CI = 1.5 to 2.9), adjusted for age (OR 2.6, 95% CI = 1.8 to 3.7) (Fig. 2).

DISCUSSION

We hypothesized that the assessment of alexithymia could be helpful in selecting patients with GI symptoms to prevent invasive and expensive further diagnostic procedures. In this study, we found no difference in the prevalence of alexithymia between patients with and without an endoscopic organic cause for their symptoms. Patients with alexithymia present with a higher number and more severe symptoms.

In other studies where alexithymia was assessed in patients with functional GI diseases, mean scores on the TAS-20 were compared with scores of other patients or healthy controls. Mean scores in healthy subjects (ie, students and comparable controls) ranged from 41 to 45, which is lower than the mean scores we found in our patient population. On the other hand, mean scores in patients with functional GI disorders (ie, functional dyspepsia and irritable bowel syndrome) ranged from

TABLE 3. Alexithymia and Gastrointestinal Symptoms

	Presence N	Alexithymia %	Unadjusted OR (95% CI)	Adjusted* OR (95% CI)
Abdominal pain	456	27	1.7 (1.3–2.2)	1.8 (1.4–2.5)
Epigastric pain	405	25	1.4 (1.0–1.8)	1.5 (1.1–2.0)
Heartburn	348	25	1.3 (1.0–1.8)	1.4 (1.0–1.9)
Regurgitation	392	26	1.4 (1.1–1.9)	1.5 (1.1–2.0)
Abdominal rumbling	619	21	1.0 (0.8–1.3)	1.1 (0.8–1.5)
Bloating	588	26	1.3 (1.0–1.7)	1.3 (1.0–1.8)
Empty feeling	244	26	1.4 (1.0–1.9)	1.7 (1.2–2.4)
Nausea	303	25	1.3 (1.0–1.8)	1.4 (1.0–1.9)
Vomiting	110	33	1.9 (1.2–2.9)	1.9 (1.2–3.0)
Loss of appetite	252	29	1.7 (1.2–2.3)	1.6 (1.2–2.3)
Postprandial fullness	427	26	1.5 (1.1–2.0)	1.6 (1.2–2.1)
Belching	486	23	1.2 (0.9–1.6)	1.2 (0.9–1.6)
Flatulence	743	22	1.2 (0.9–1.6)	1.3 (0.9–1.7)
Hematemesis	22	45	3.1 (1.3–7.4)	3.7 (1.5–9.2)
Dysphagia liquid food	70	31	1.7 (1.0–2.9)	1.7 (1.0–3.0)
Dysphagia solid food	126	29	1.5 (1.0–2.3)	1.5 (1.0–2.3)

*ORs are adjusted for alcohol use and age > 50 yr.

52 to 59 and are in accordance with our results.^{19,26–28} This indicates that alexithymia is more common among patients presenting with GI symptoms than in a healthy population. Jones et al²⁹ recently found the same results in their study comparing alexithymia and somatosensory amplification between patients with functional dyspepsia and healthy controls. They concluded that alexithymia might play a role in symptom generation and perception, but the connection they found was less strong than previously reported.

The finding that patients with alexithymia present with a higher number and more severe symptoms is in accordance with the results of Chou et al.³⁰ This group reported that functional dyspeptic patients with high depression scores report a higher total number of symptoms, compared with nondepressed patients with functional dyspepsia. There was no difference between

total symptom severity scores; however, depressed patients reported significantly higher severity scores on specific symptoms.

Although recent findings suggest that alexithymia is a multidimensional construct, in general, a score of more than 60 on the TAS is considered indicative of alexithymia. Many studies used mean TAS scores, instead of this cutoff point, to assess differences in alexithymia. Using both this cutoff point and mean scores, we found no difference between patients with and without an organic cause for their symptoms. The absence of a difference might imply that the studied population, that is, patients presenting to the general practitioner or gastroenterology practice with abdominal symptoms, is a selected group. It is possible that alexithymic patients consult a physician more easily and more often in comparison to nonalexithymics, no matter the cause of their symptoms. This is in accordance with the fact that subjects with functional GI disorders on average have higher alexithymia scores than healthy subjects. Another explanation could be that the absence of an organic abnormality at endoscopy does not mean that there is no organic disorder that might have explained symptoms: many patients with gastric reflux disease and peptic ulcer disease have no abnormalities at endoscopy and some patients might have disorders that are undetectable by endoscopy, such as gallstones, mesenteric ischemia, mild pancreatitis, or sugar malabsorption. The group with functional GI diseases might include some patients such as these. Therefore, among these patients, alexithymia has no predictive value for the outcome of endoscopy.

In conclusion, alexithymia has no value in predicting endoscopy outcomes, and with that, prevention of expensive and invasive procedures in patients with GI symptoms. However, when dealing with a patient with many and more severe symptoms, alexithymia should be considered and attention should be paid to related disorders such as depression and essential hypertension.

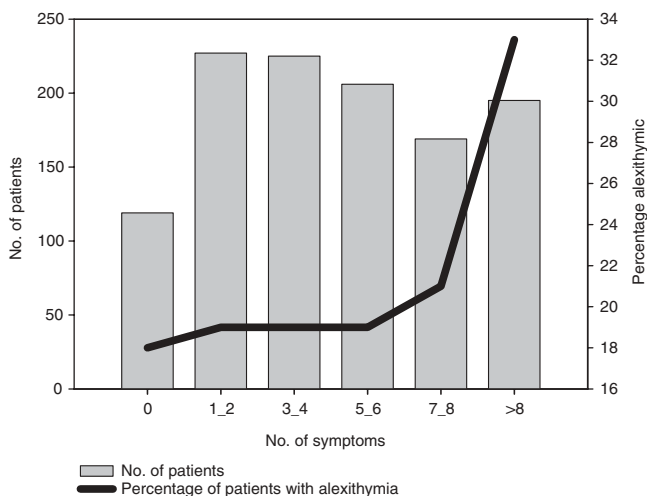


FIGURE 2. Association between number of symptoms and alexithymia.

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