Dyspepsia in the general population in Jordan

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Objective: To assess the prevalence of dyspeptic symptoms in the general population of Jordan. Methods: We selected families of final year students at the two medical schools in Jordan to represent the general population. The students were instructed to complete questionnaires for all their family members and all members of the close family above the age of 15 years living in the area. The questionnaire enquired about dyspeptic symptoms in the previous 12 months. Information about any chronic disease, medications used frequently, previous operations and cigarette smoking was obtained. Results: Of 2254 completed questionnaires, dyspeptic symptoms were reported in 1354 (60.1%) during the previous 12 months. Heartburn was present in 1111 (49.3%), abdominal distension in 1224 (54.3%), recurrent abdominal pain with ulcer-like characters in 450 (20%), discomfort following meals in 316 (14%), symptoms related to fatty foods in 359 (15.9%) and symptoms related to ingestion of lactose-containing foods in 96 (4.3%). Conclusion: Dyspeptic symptoms are highly prevalent in Jordan. This may have an impact on the economy and health resources. [Indian J Gastroenterology;2000;19:68-70]

Key words: Abdominal distension, abdominal pain, epulture, weight loss, heartburn, nausea, vomiting

Dyspepsia is defined as upper abdominal or retrosternal pain, discomfort, heartburn, nausea, vomiting, or other symptoms considered to be referable to the proximal alimentary tract.1 Surveys from the West indicate that dyspepsia accounts for a considerable proportion of consultations by primary care physicians and at secondary referral centers.2,3,4 This paper reports on the pattern, prevalence, and distribution of various gastrointestinal symptoms in the general population in Jordan. Our findings may help to formulate appropriate preventive and management responses.

Methods

We designed and validated a questionnaire and selected a sample to represent as much as possible the general population of Jordan. The questionnaire contained questions on the age and sex of the subject, area of residence, occupation, cigarette smoking, alcohol drinking, and history of previous surgery, chronic illness during the previous 12 months and drugs taken on a regular basis or frequently. Recurrent gastrointestinal symptoms over the last 12 months were asked about.

Details of dyspeptic symptoms, including upper abdominal or retrosternal pain, discomfort, heartburn, nausea, vomiting, abdominal distension, and belching, were recorded. Intolerance to fatty, spicy and acidic foods, and milk was recorded. Abdominal pain occurring at or above the navel and/or with features of ulcer-like dyspepsia such as relief with food and nocturnal occurrence was considered to indicate dyspepsia. Acute symptoms that did not recur were ignored, as was abdominal pain related to menstruation.

Symptom frequency was assessed as occasional if it occurred less than once a week, frequent if it occurred at least once a week, and persistent if it occurred daily or on most days of the week. Symptom severity was expressed as mild if symptoms did not interfere with daily activities, moderate when they caused some disturbance in daily activities, and severe when they markedly affected the life of the subject and/or led to absenteeism from work.

The study subjects consisted of the family members of final year students in the two schools of medicine in Jordan, namely, the Jordan University in Amman, and the Jordan University of Science and Technology in Irbid (the northern part of Jordan). Each student was given 10-20 questionnaire sheets and was asked to fill these for all his/her family members and all members of the close family above the age of 15 years living in the area. Various terms and expressions used in the questionnaire were explained to them and they were asked to fill these out themselves during the interview in order to be more comprehensive and accurate. This method had been used by us earlier in evaluation of colonic symptoms.5

Statistical analysis was done using the χ² test and p values less than 0.05 were considered significant.

Results

Demographic data

We received back 2254 completed sheets out of 2900 sheets (77.7%) distributed to students in both medical schools. These included 1323 sheets (58.7%) from the middle zone which includes the capital of the country, 670 (29.7%) from the northern zone which includes Irbid city, and 261 (11.6%) from the southern area. These
values correspond to the population distribution in these zones as appeared in the census carried out in 1994, which showed that 60.4% of the population live in the middle zone, 27.6% in the northern and 12% in the southern zone. Respondents included 1168 women (51.8%) and 1086 males (48.6%), corresponding to the gender distribution in the country where either sex represents about 50% of the population. There were 1717 subjects (76.2%) aged 15-40 years and 537 aged 41 years or more, compared to 74.9% and 26.1% respectively in the 1994 census. Smoking was reported in 434 subjects (19.3%); this included 356 men (32.8% of men) and 78 women (6.7%). One hundred and seventy three subjects (7.7%); including 126 men gave history of drinking alcohol at least once per month, in the last 12 months.

Prevalence of chronic non GI diseases

Chronic non-GI diseases were reported by 286 subjects (12.7%): diabetes in 99 (4.4%), hypertension in 149 (6.6%), ischemic heart disease in 29 (1.3%), bronchial asthma in 137 (6.1%), history of anemia with hemoglobin levels below 12 g/dL in 128 (5.7%), and other chronic diseases in 151 (6.7%). History of abdominal surgery was reported by 401 subjects (17.8%).

Prevalence of GI symptoms

Symptoms of dyspepsia in the previous 12 months were reported by 1354 (60.1%) subjects. Heartburn was reported by 1111 (49.3%) subjects; of these, 787 (34.9%) had occasional heartburn, 252 (11.2%) had frequent heartburn and 72 (3.2%) had persistent heartburn. Heartburn was described as mild by 580 (52.2%) subjects, moderate by 428 (38.5%) and severe by 103 (9.3%). Mild heartburn was more frequent in women (295, versus 285 men; p=0.013). Hypertension was present in 118 of 1111 subjects (10.6%) with heartburn, compared to 6.6% in the general population (p<0.0001), while bronchial asthma was present in 92 subjects (8.3%) with heartburn compared to 6.1% in the general population (p<0.001). Diabetes had the highest prevalence of heartburn, present

Table 1: Prevalence of dyspeptic symptoms in general population of Jordan

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal distension</td>
<td>744 (68.5)</td>
<td>475 (40.7)</td>
<td>1224 (54.3)</td>
<td>0.00001</td>
</tr>
<tr>
<td>Heartburn</td>
<td>588 (54.1)</td>
<td>526 (45.0)</td>
<td>1111 (49.3)</td>
<td>0.0002</td>
</tr>
<tr>
<td>Nausea</td>
<td>324 (29.8)</td>
<td>491 (42.0)</td>
<td>802 (35.6)</td>
<td>0.00001</td>
</tr>
<tr>
<td>Recurrent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>328 (30.2)</td>
<td>348 (29.2)</td>
<td>710 (31.6)</td>
<td>ns</td>
</tr>
<tr>
<td>Borborygni</td>
<td>312 (28.7)</td>
<td>324 (27.7)</td>
<td>636 (28.2)</td>
<td>ns</td>
</tr>
<tr>
<td>Vomiting</td>
<td>209 (19.2)</td>
<td>308 (31.5)</td>
<td>577 (25.6)</td>
<td>0.00001</td>
</tr>
<tr>
<td>Postprandial discomfort</td>
<td>130 (12)</td>
<td>186 (15.9)</td>
<td>316 (14)</td>
<td>0.008</td>
</tr>
<tr>
<td>Belching</td>
<td>158 (14.5)</td>
<td>110 (9.4)</td>
<td>268 (11.9)</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

All values are as number (%).

Table 2: Prevalence of food intolerance in general population of Jordan

<table>
<thead>
<tr>
<th>Type of food intolerance</th>
<th>Men (n=1086)</th>
<th>Women (n=1168)</th>
<th>Total (n=2254)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty food</td>
<td>109 (10)</td>
<td>260 (22.3)</td>
<td>369 (16.4)</td>
</tr>
<tr>
<td>Spicy foods</td>
<td>96 (8.8)</td>
<td>86 (7.4)</td>
<td>182 (8.1)</td>
</tr>
<tr>
<td>Acidic foods</td>
<td>51 (4.7)</td>
<td>53 (4.5)</td>
<td>104 (4.6)</td>
</tr>
<tr>
<td>Milk</td>
<td>45 (4.1)</td>
<td>51 (4.4)</td>
<td>96 (4.3)</td>
</tr>
<tr>
<td>Other foods</td>
<td>51 (4.7)</td>
<td>53 (4.5)</td>
<td>104 (4.6)</td>
</tr>
</tbody>
</table>

All values are as number (%). *p<0.0001 as compared to men in 73 (73.9%), compared to a prevalence of 49.3% in the general population, (p<0.009); 13 of them had persistent symptoms.

Abdominal distension was the commonest symptom, present in 1224 subjects (54.3%); it was described as severe by only 72 (3.2%). Recurrent abdominal pain was reported by 712 (31.6%) subjects. The pain was in the upper abdomen with or without features of ulcer-like dyspepsia in 450 (20%), localized to the epigastrium in 246 (10.9%), and severe in 176 (7.8%). Abdominal discomfort following meals, not reaching the level of pain, was present in 316 subjects (14.0%).

Nausea was common in 160 subjects (7.1%); an additional 646 (28.3%) had occasional nausea. Vomiting was a problem in 72 subjects (3.2%); 505 subjects more (22.4%) had occasional vomiting. The total prevalence of various GI symptoms in the sample and with respect to gender is shown in Table 1.

Intolerance to food was common, present in 637 (28.3%) subjects (Table 2).

Discussion

This study was carried out to assess the prevalence of various dyspeptic symptoms in Jordanians. Choosing a true random sample to represent the general population for this study was not possible due to lack of medical registration and inaccurate, changing addresses. Since acceptance in the two medical schools in the country depends only upon the score attained by the student in the general secondary certificate examination, irrespective of their area of residence or their socioeconomic class, the students in these two schools were assumed to represent all the areas of the country and the different social classes of the community.

The prevalence of dyspepsia in Jordan (60.1%) was higher than that reported from other countries (19% to 41%). This difference could be due to a true higher prevalence, though methodological factors undoubtedly contributed to this. We assessed the prevalence of various dyspeptic symptoms rather than syndromes, various symptoms were graded from mild to severe, the questionnaires were filled by the medical students, and a rather long period for the survey (one year) was used; all these factors could contribute to the high prevalence.

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The commonest symptom reported was abdominal distension (54.3%). In the majority it was mild, but it was severe and persistent in 3.2%. Some patients complaining of excessive intestinal gas appear to suffer from a variant of the irritable bowel syndrome, reported in 13.7% of the population,\(^6\) where sensations of bloating and distension predominate. Other factors responsible include ingestion of excess starches, legumes and more commonly baked beans which are widely consumed in the country and considered to be the basic dishes for most people. The high prevalence of lactose intolerance also contributed to abdominal bloating in some.

Heartburn came next in prevalence (49.3%), compared to a prevalence of 36% in the United States.\(^7\) This higher prevalence could be attributed to several dietary and environmental factors: excessive ingestion of olive oil which is very popular in the country, frequent ingestion of coffee, the habit of sleeping in the afternoon after meals, taking a heavy late lunch and multiple pregnancies in women.

Chronic or recurrent abdominal pain is a common GI symptom. Various types of abdominal pain were present in 31.6% of the population screened. Epigastric pain was the commonest (10.9%), reflecting the high prevalence of ulcer disease and ulcer-like pain. A mass survey of more than one million Americans revealed a similar prevalence where 13% experienced “stomach pain” and 15% experienced pain in the lower abdomen.\(^8\) While the history, physical examination and laboratory tests may point toward a correct diagnosis, the cause in many cases remains indefinite without the help of imaging studies or endoscopy.\(^9\) Therefore recurrent abdominal pain should be investigated in order to save time and costs of unnecessary empirical therapy which may delay the diagnosis and definitive therapy.

Nausea and vomiting are common recurrent GI symptoms, reported to be frequent in 7.1% and 3.2% respectively, though milder degrees are more common. A similar study based on discrete symptoms in Glasgow showed that 8.9% of a population sample had nausea, vomiting or retching over the two-week period before the survey.\(^10\) Nausea and vomiting may also be manifestations of non-GI conditions, it is difficult to assess from this study how frequently they were due to organic GI diseases.

Adverse food reaction is a general term indicating any untoward reaction following the ingestion of food. Food intolerance is believed to comprise the majority of adverse reactions to foods and is a common cause for dyspeptic symptoms worldwide.\(^11\) Symptoms commonly occur following ingestion of fatty foods, as seen in 15.2% of the sample screened. Manifestations range from mild discomfort in the abdomen to “indigestion”, heartburn, crampy abdominal pain and diarrhea. Ingestion of fatty foods is common in Jordan, especially olive oil which is an essential component in nearly every meal for all the social classes in the country. Adverse reactions to milk and milk products were reported by 4.3% of the subjects although the percentage of individuals with lactase deficiency in the community is reported to be 30%.\(^12\) Since milk and cheese are popular in the country, lactase deficiency could be responsible for many cases of dyspepsia.

In conclusion, although GI symptoms are common in the country, many of them are due to habits, foods and environmental factors that can be clarified to the population and controlled.

References


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