

GASTROENTEROLOGY

Clinical and epidemiological perspectives of dyspepsia in a multiracial Malaysian population

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Abstract

Dyspepsia is perhaps the most common gastrointestinal disease universally. The prevalence of dyspepsia ranges from 7–40% in population based studies worldwide. These figures vary with definition of dyspepsia used and also with the survey methodology.

As with Western studies, functional dyspepsia (FD) predominates in Asia. With a decline in peptic ulcer disease and gastric cancer, the proportion of FD is set to increase further. Studies have shown FD to account for 50–70% of cases of uninvestigated dyspepsia.

In Malaysia dyspepsia has been reported in up to 15% of a rural and 25% of an urban population. No racial differences were seen in the rural survey. In the urban survey, Malays and Indians were found to have significantly more dyspepsia than Chinese. No clear explanation can be found for these racial differences. In clinical practice, Malays seem to complain a lot of wind and bloating in the “stomach.” This is interesting to note when you compare it with the prevalence of *H. pylori* which is distinctly less common amongst Malays compared to the Indians and Chinese.

As with many Asian populations, many Malaysians do not consult for complaints of dyspepsia. Many will self medicate and others may even bear with their complaints. This is probably true in the rural population. Traditional medications are often used and these are often ethnic based. Different types of lotions for example are used for massaging the putative area in the abdomen by Malay, Chinese and Indian patients. Moxibustion and acupuncture is still practiced by Chinese traditional physicians for treatment of dyspepsia. The notion that mood disorders may underlies dyspepsia is still poorly accepted by a less educated or rural population who consider a psychiatric consultation a taboo.

Amongst urban dwellers where Westernized medical care is readily available and the awareness of potential serious disease like cancer is higher, consultation for dyspepsia is certainly higher. Indeed a higher education level has been identified as independent risk factors for dyspepsia in both an urban and rural population survey in Malaysia. With greater consultation for dyspepsia, there has also been a higher demand and utilization of endoscopy services for investigation of gastrointestinal diseases in the country.

Introduction

Dyspepsia, defined as pain or discomfort centered in the upper abdomen, is an extremely common yet poorly understood clinical problem. In the majority of cases, no underlying structural abnormality can be identified and patients are then labeled as having functional or non-ulcer dyspepsia. Symptoms can be severe and occasionally incapacitating and it cannot be dismissed as a trivial medical problem. Taking into account the costs of doctor consultations, medications, utilization of healthcare services, impairment of work performance and absenteeism, dyspepsia is indeed a huge burden to society.¹

Burden of dyspepsia

Dyspepsia is perhaps one of the most common gastrointestinal problems universally. In the UK, the incidence rate of dyspepsia has been reported to be about 12–15 per 1000 person-years.^{2,3} The prevalence of dyspepsia in population studies ranges from 7% to over 40%.⁴ The reason for this variation is due to the differences in definition of dyspepsia used and the different populations studied. In clinical practice, dyspepsia is one of the most common complain of patients and constitutes 2–4% of patients attending primary care clinics.^{2,5} In some specialty gastroenterology clinics, patients with dyspepsia may comprise more than half of the consulting patients.⁶

If we consider that clinic consulters constitute less than half of all patients with dyspepsia, we can imagine that the total burden of dyspepsia is indeed huge in any population. Impairment of health related quality of life with dyspepsia is well demonstrated in two separate studies carried out in Malaysia^{7,8} where using a locally validated Euroqol quality of life instrument (EQ 5D), a significant impairment in overall utility score was seen in patients with dyspepsia compared to healthy controls. When individual domains were analyzed, similar impairment was seen in all domains.

Epidemiology of dyspepsia in Malaysia

Few formal epidemiological studies on dyspepsia have been carried out in Malaysia. In two published studies, Mahadeva *et al.*, firstly, reported in a house-to-house survey of a rural population in Banting near Kuala Lumpur, 292 of 2000 (14.6%) respondents were found to have dyspepsia using a modified Rome II criteria.⁷ Dyspepsia was found to be associated with female gender (15.8 versus 12.7% males, $P = 0.058$), Chinese ethnicity (19.7 versus 14.2% non-Chinese), higher education levels, medium-range incomes (19.1% medium range versus 13.3% low range), non-village-type housing (16.3 versus 13.5% village-type house, $P = 0.08$), nonsmokers (18.7 versus 13.7%, $P = 0.015$), non-tea drinkers (19.5 versus 12.3%, $P < 0.0001$), regular analgesia intake (27 versus 12.7%, $P < 0.0001$), and subjects with chronic illness (26.6 versus 11.1%, $P < 0.0001$). Following multiple logistic regression analysis, higher levels of education- secondary (odds ratio (OR) 2.13, 95% confidence interval (CI) = 1.15–3.93) and tertiary (2.70, 95% CI = 1.30–5.62) education, non-village housing (OR 1.36, 95% CI = 1.02–1.80), regular analgesia (OR 2.22, 95% CI = 1.60–3.09), and chronic illness (OR 2.83, 95% CI = 2.12–3.77) were found to be independent risk factors for dyspepsia. Race was not found to be an independent risk factor.

In a second study, performed in an urban population in a suburb of Kuala Lumpur, using the same Rome II criteria, dyspepsia was found in 496 of 2201 respondents (24.3%).⁸ Following multiple logistic regression analysis, independent predictors for dyspepsia, were identified as: Malay (OR 2.17, 95% CI = 1.57–2.99) and Indian (OR 1.59, 95% CI = 1.03–2.45) ethnicity, heavy chili intake (OR 2.35, 95% CI = 1.15–4.80), use of regular analgesia (OR 3.51, 95% CI = 2.54–4.87) and chronic illness (OR 1.67, 95% CI = 1.22–2.28).

Racial differences in the prevalence of dyspepsia

Malaysia epitomizes the multiraciality of an Asian country where three major races- Malay, Chinese and Indians live together. Racial differences in the burden of various upper GI diseases have been previously described and shown to be intriguing.^{9–11} In the two studies on dyspepsia reported above, no significant differences between races, were seen in the rural study.⁷ However in the urban study, Indians and Malays were shown to have a higher prevalence of dyspepsia compared to Chinese.⁸ The reason for these differences is unclear. It is pertinent to note that *H. pylori* infection which underlies the majority of serious UGI disease is distinctly more common in Indian and Chinese compared to the Malays.^{9,12} However, the association of *H. pylori* and functional dyspepsia has

not been well established compared to its association with peptic ulcer and gastric cancer which is in fact most common amongst the Chinese.^{11,13}

Dietary differences have long been speculated for differences in dyspepsia between races as disease symptoms are closely related to meals. The popular notion is that intake of foods with a high content of chilis and spices is “dyspepsia generating.”¹⁴ Indeed studies using capsaicin, the active ingredient in chilis have been shown to induce GI symptoms in healthy adults.^{15,16} It would be convenient to postulate that Malays and Indian who consume chilis as a staple dietary ingredient would then be constantly exposed to a “symptom inducing” food. However in our rural study, chili intake was not identified as an independent risk factor and in the urban study, heavy but not mild or moderate chili intake was identified as an independent risk factor for dyspepsia.^{7,8} Difficulties exist in quantifying the amount of a food ingredient consumed and even more so with a food that is often used as a condiment only. Great overlap also exists between the types of food consumed in Malaysia and it is unusual for a particular race to confine itself to a purely ethnic-based type of diet.

Genetic susceptibility is likely to play a role as well. This is suggested by a previous study which showed that both Malays and Indian compared to Chinese were more predisposed to develop another functional disease- non-erosive reflux disease.¹⁰ In another study from Malaysia, Indians were found to have a higher risk to both gastroesophageal reflux disease and Barrett’s esophagus and it was postulated that this difference is genetic in origin.¹⁷ It is also interesting to note that in the two population studies described above the health-related quality of life (HRQOL) was impaired the greatest amongst Indians compared to Chinese and Malays.^{7,8} For functional type of disorders, perception of pain and discomfort is crucially important and this may underlie the racial differences that we see in our local Malaysian population. In an earlier but smaller study from neighboring Singapore, with the same racial mix as Malaysia, no racial differences however, were found with regards to the prevalence of upper abdominal symptoms.¹⁸

Health care consultation

With rapid urbanization, most of the Malaysian population has access to modern health facilities. Western educated patients regardless of race usually seek Western type of investigations and treatment. However with regards to race, a larger proportion of Malays still reside in the rural areas where modern health facilities are still lacking. Many of these patients resort to self cure or traditional types of health care.^{19–21} These include various traditional medications and potions. As for the treatment of dyspepsia, abdominal massaging and moxibustion is still common practice not just amongst the Malays, but amongst the more traditionally minded Chinese and Indians as well. In a recent study, Malays and Indian were found to utilize health services more than Chinese.²²

Utilization of endoscopy services

Gastrointestinal endoscopy services are widely available throughout the country. The majority of cases that undergo gastroscopy are for the evaluation of dyspepsia. The diagnostic yield in terms of peptic ulcer disease is about 20% and of gastric cancer –10%.¹³ On the other hand, data is not available as to the proportion of patients

with dyspepsia that undergo gastroscopy. As the incidence rate of gastric cancer is relatively low in the Malaysian population and unlike other countries in East Asia such as Japan, Korea and Taiwan, no screening program is available for the population. Nonetheless, Chinese especially older males, in Malaysia remain at a higher risk of developing gastric cancer and should receive particular attention.²³ *H. pylori* serological testing as part of a health screening test panel is now widely used and this will allow in practical terms the use of a “test and treat” strategy for dyspepsia. Such a strategy has already been shown to be beneficial and cost-effective in the local Malaysian setting.²⁴

Treatment of functional dyspepsia

Treatment of functional dyspepsia should start off with non-drug therapy including a clear explanation of the illness and reassurance from the doctor. Patients' concerns must be addressed and the psychosocial context of symptoms explored. This can be easily overlooked in busy clinic practices.

Most Malaysian patients expect prescription of drugs and would be dissatisfied if they were to go home without one. Various drugs have been used which include antacids, histamine-2 antagonists, prokinetic agents and proton-pump inhibitors (PPIs). Excessive acid is widely perceived as the underlying cause of dyspepsia and as such potent acid suppression with PPIs have been the most popularly prescribed drugs. However, prescription patterns have been influenced by costs and availability of drugs. Government clinics for example, supply only a limited amount of PPIs for patients and antacids and H2 antagonists are therefore, the more widely prescribed drugs. Private General Practice clinics are also limited by the amount of money patients are willing to pay for medications and it is usually the specialist gastroenterology practices who prescribe PPIs on a regular basis.

There has been a greater awareness of the difference between reflux and dyspepsia symptoms. However in clinical practice patients and doctors have difficulty differentiating between the two²⁵ and prescribing practices have been essentially similar. In an interesting study on symptoms in consecutive endoscoped patients with erosive esophagitis, 63 of 186 (33.9%) of patients had no symptoms of heartburn or regurgitation at all. Of the 123 patients with reflux symptoms only 6 (4.2%) had them as the sole presenting symptoms. On the other hand, more than 80% of patients complained of typical dyspeptic symptoms of wind and bloating.

The challenge in dyspepsia always, is to distinguish between organic and functional dyspepsia. Cancer registry data is not matured in Malaysia but data available from endoscopy based studies show a marked decline in gastric cancer in the local population.²⁶ Functional dyspepsia is not a life threatening disease with serious consequences; nonetheless, missing organic disease must be minimized. In our local setting, pancreatic carcinoma has often times been missed for dyspepsia and hepatocellular cancer not infrequently presents for the first time as abdominal pain or discomfort and labeled as dyspepsia.

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