

## The study of risk factors associated with dyspepsia

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### Abstract

Dyspepsia is defined as upper abdominal or retrosternal pain or discomfort referable to the proximal alimentary tract. Dyspepsia is a major health problem. The aim of the study is to find out the risk factors associated with dyspepsia. Total 203 patients with dyspepsia participated in the study and analyzed for *H. pylori* infection and questioned for risk factors like intake of coffee and spices. Most of the patients were from age group of 18-38 years and minimum from 49-60 yrs. Out of 203 patients 36 was found positive for *H. pylori* infection. 104 males and 99 females participated in the study. The males were found to be more infected with *H. pylori* than female. Spicy food was consumed by 115 patients and 88 patients consumed non spicy food. Coffee consumption was found to be less in 117 patients than 86 patients who consumed >3 cups of coffee each day. Spicy food habit and increased consumption of coffee may possibly associated with increase in symptoms of dyspepsia along with *H. pylori* infection.

**Keywords:** dyspepsia, *H. pylori*, spicy food, coffee.

### 1. Introduction

Dyspepsia is a complex set of symptoms, rather than an indication of a specific disease.[1] Dyspepsia is defined as upper abdominal or retrosternal pain or discomfort referable to the proximal alimentary tract. Dyspepsia is a major health problem. The prevalence of dyspepsia ranges from 20%-30% in the general population.[2] It is the condition of chronic or recurrent pain or discomfort centered in the upper abdomen. Dyspepsia is world-wide a highly prevalent health issue involving substantial and increasing costs.[3-6] The pathogenesis of functional dyspepsia is unknown. Many pathogenic mechanisms have been proposed, like disturbance in gastric acid secretion, disordered gastric motility, abnormalities of electrical control activity, abnormalities of perception, psychological disturbances, environmental factors and *Helicobacter pylori* (*H. pylori*)[7].

Previously, when peptic ulcer disease was more common, a larger proportion of dyspepsia was linked to peptic ulcer disease, and thus to *H. pylori*. So far, the research of the relationship between dyspepsia and *H. pylori* reflects a period with a higher prevalence of *H. pylori* than today, in most developed countries.[8] *H. pylori* is a gram negative, spiral, flagellated bacterium with the capability of abundant

urease production. *H. pylori* bacterium is usually found under the mucus layer in the gastric pits and in close opposition to gastric epithelial cells.[1] Organism plays a major role in several upper gastrointestinal diseases which present as dyspepsia.[9,10] It is a major etiological factor in peptic ulcer disease, gastric carcinoma, and gastric mucosal associated lymphoid tissue (MALT) lymphoma.[11-13]

The strong association of *H. pylori* with dyspepsia has caused a major paradigm shift in patients' management.[14] In developing countries, more than 80% of the population is *H. pylori* positive.[15] However, during this decade, there have been some reports showing a decline in global prevalence of *H. pylori* infection and peptic diseases including many Asian countries. Lower socioeconomic status, lower levels of education, poor hygiene and sanitation, household crowding were associated with a higher prevalence of *H. pylori* infection.[16] The study was carried out to find the risk factors associated with dyspepsia.

### 2. Material and Methods

The study was conducted at Sri Adichunchanagiri Hospital and Research Centre, Bellur from August 2002 to February 2004 on total 203 cases. Patients from medicine OPD with various dyspeptic symptoms were included, upper

GI endoscopy was done on willing subjects and biopsy material tested for *H. pylori* infection and screened for other organic causes of dyspepsia. The patients were included based on following criteria

- Patients with dyspeptic symptoms having score >5
- Duration of symptoms >1 month
- Drug induced dyspepsia
- Patients with other systemic illness eg. Diabetes mellitus
- Patients with peptic ulcer diseases
- Age between 18-60 years
- Physical examination may be normal or abnormal

Patients were excluded if age is below 18 and above 60 years, with history of jaundice and with history of alcohol abuse and smoking.

**2.1 Endoscopic assessment**

All the patients gave informed consent and the procedure was elective. Clinical symptoms were assessed in a systematic manner. The endoscopic evaluation of patients was performed using a sterile video gastroscope. No sedation was given patients; about 10% xylocine solution was sprayed in the oropharynx and over posterior pharyngeal wall few minutes before the procedure. The examination was done in left lateral position with thighs and knee flexed. The tip of the endoscope was placed at the cricopharyngeal sphincter of the oesophagus and patient was encouraged to swallow while gentle pressure was exerted. The endoscope was then passed under direct vision into stomach. The instrument tip is retro fixed in the stomach to visualize gastric cardia, the fundus and whole of the lesser curvature. The pylorus was transverse and first and second portion of duodenum was visualized. The site from where biopsy pieces were taken; duodenum, antrum, fundus, cardiac and esophagus, the biopsies samples were subject to rapid urease test.

**2.2 Helicobacter pylori status**

All the biopsies samples were tested using a rapid urease test (Staar Tech Ltd., Calcutta) which was observed for colour change. Biopsies were placed immediately in the solution present in the kit and in the presence of H pylori the solution from the kit which turned from yellow to pink. Where colour change did not occur immediately the solution was observed up to 24 hours later. If no colour change took place at 24 hours, the kit was discarded and the result recorded as negative for *H. pylori*.

**2.3 Statistical analysis**

All the data were analyzed using descriptive statistics.

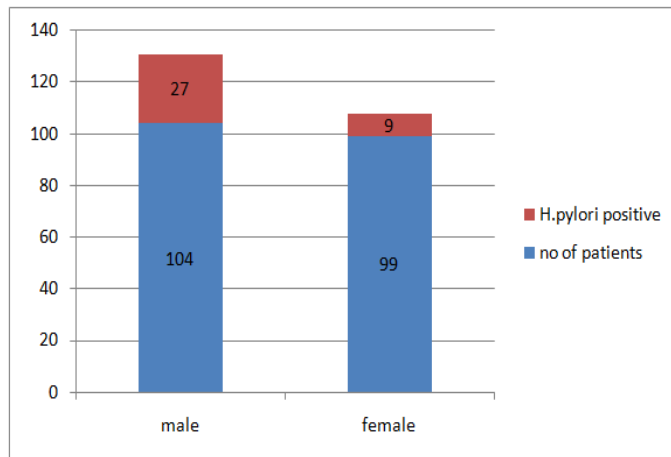
**3. Result**

**Table 1: Age Range of patients with *H. pylori* positive status**

Sr. No	Age	No. of Patient	%	<i>H. pylori</i> positive	%
1	18-28	63	31.5	12	19
2	29-38	66	33	11	16.7
3	39-48	40	20	7	17.5
4	49-60	34	17	6	17.6

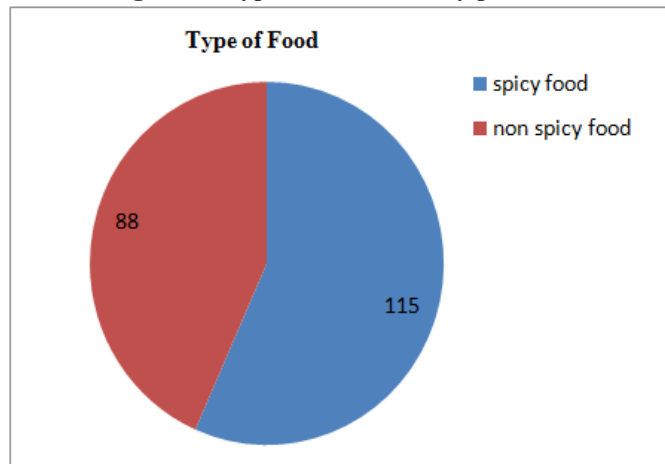
Total 203 patients participated in the study out of which most of the patients were from age group of 18-38 years and minimum from 49-60 yrs. *H. pylori* infection was present in 12 cases out of 63 patients in the age group of 18-28 and found to be maximum.

**Figure 1: showing the gender of patients and *H. pylori* status**



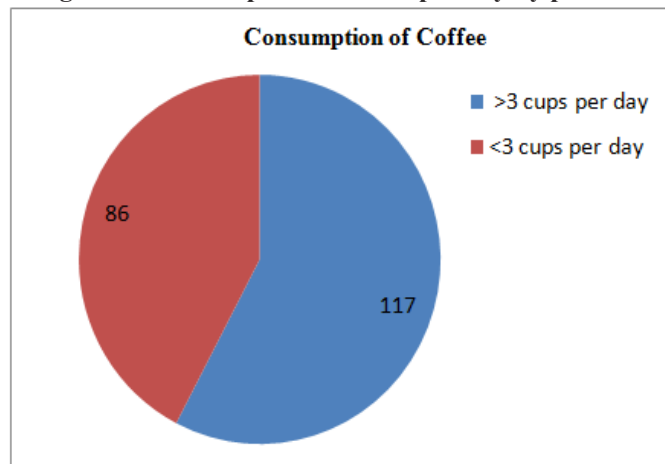
Out of 203 patients with dyspepsia, 104 were males and 99 were females. The males were found to be more infected with *H. pylori* than female in this study.

**Figure 2: Type of consumed by patients**



Out of 203 cases, spicy food was consumed by 115 patients and 88 patients consumed non spicy food.

**Figure 3: Consumption of coffee per day by patients**



Out of 203 cases < 3 cups of coffee was consumed by 117 patients while 86 patients consumed >3 cups of coffee.

#### 4. Discussion

The Dyspepsia is a common symptom with an extensive differential diagnosis and a heterogeneous pathophysiology and it is related to the socioeconomic status and lifestyle factors.[17,18] In our study majority of the patients were found in age group of 18-38 yrs (65%) and as the age advanced the prevalence of dyspepsia decreased. These findings which indicated a decline in the prevalence of dyspepsia symptoms with age was consistent with our findings.[19,20] Some studies also reported increased *H. pylori* infection in age groups of 20-40 years than the older age group but in some studies it was found that age distribution of *H. pylori* infection did not show any trend towards increase or decrease in infection with the advancing age. [21-23]

Dyspepsia as a symptom was more common in males as compared to females among 203 patients selected on the basis of symptoms. These findings were consistent with the findings of Kaore *et al* [12], which showed higher prevalence of dyspepsia in male gender. Whereas in some study it was found that female gender was more prevalent than male. Equal gender distribution was found in some studies, while complaints of severe pain were more frequent among female patients.[16,21,23] This sex difference in prevalence may be attributed to numerous epidemiological factors including country of origin, socioeconomic class, place of birth and ethnicity.

In dyspeptic patients, about 60% patients had history of consumption of spicy food. Over eating or ingestion of food such as spices causes acute mucosal injury. Pepper is one of the items that mostly aggravated the symptoms in many patients. Pepper and pickles serve as a base for many nutrients. They are considered as one of the top 10 stimulating nutrients that adversely affect dyspepsia. Previous studies have demonstrated that red pepper consumed in diets taken not chronically stimulates the TRPV1 receptor, which increases the sensitivity of the patient. Capsaicin can mediate a painful, burning sensation in the human gut via the transient receptor potential vanilloid-1 (TRPV1). Chronic consumption of red pepper diets via TRPV1 receptors can decrease dyspeptic symptoms.[24]

In order for patients to realize whether or not dietary changes are effective in reducing dyspepsia symptoms, they can eliminate specific foods and then resume using those eliminated items. But because of induction symptoms, many patients avoid of certain edibles especially fruit. Many patients also omit some food items because of fear or cultural preconditions. So, further research is needed to establish the role of diet therapy in functional dyspepsia and logical use of diets.

Coffee consumption was found in all dyspeptic patients. There is apparently no link between gastro-intestinal complaints and consumption of coffee [25] A study of 8,407 adults, conducted in the UK, showed a significant relationship between the presence of *Helicobacter pylori* and dyspepsia, but no relationship with coffee consumption [26]. It is, however, considered that stomach irritation is not due to caffeine but seems to be linked with other specific constituents of coffee some of which have been identified [27]. Several studies noted both dyspeptic and non-dyspeptic groups had similar proportions of subjects with histories of coffee or alcohol intake [28,29]. Coffee worsened the symptoms in many of our patients. In one study, coffee was found to promote reflux but did not affect dyspepsia.[30] Coffee may aggravate dyspepsia symptoms in some cases and, if implicated, should be avoided.[30,31]

#### 5. Conclusion

Spicy food habit and increased consumption of coffee may possibly associated with increase in symptoms of dyspepsia along with *H. pylori* infection.

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