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Original Article

Endoscopic Findings and the Prevalence of Helicobacter Pylori in Dyspeptic Monks at the Priest Hospital

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Abstract **A descriptive retrospective study was carried out in 312 monks presented to the Priest Hospital with upper abdominal pain and underwent upper gastrointestinal endoscopy and tissue sampling for *H. pylor*i by the rapid urease test during March 1, 2008 and February 28, 2011. The average age was 62 + 12.7 years old (range 23-84). The result showed overall 122 infections (39.1%) with age over 50 year in 104 cases (40.9%). The endoscopic findings were gastritis (43.3%), gastric ulcer (10.9%), gastric cancer (3.5%), gastroduodenal ulcer (1.6%), duodenal ulcer (5.8%), duodenitis (7.7%) and non-ulcer dyspepsia (27.2%). Only the findings of gastric ulcer, gastric cancer, peptic ulcer and duodenal ulcer were significantly associated with *H. pylori* infection ($p < 0.05$).**

Keywords: **dyspepsia, *Helicobacter pylori*, monks, peptic ulcer**

Introduction

Dyspepsia is a distressing symptom of upper abdomen[1,2] such as pain, burning, early satiety, postprandial fullness, bloating, belching, anorexia and nausea[3-5]. It is a problem in 20-40%[6] of normal population and one of chief presenting symptoms to the physician in 20-25%[7,8]. Among possible intra-abdominal viscera, stomach, esophagus, and biliary system including gall bladder are the most culprits.[9,10] Generally dyspepsia is chronically off and on and after history and physical exam taken, patients are usually prescribed symptom-relief medications for a certain period unless alarming features[4,5,11] occur like ages older than 45 years, suspected gastrointestinal bleeding, unexplained iron deficiency anemia, unintentional weight loss more than 10%, swallowing with difficulty or pain, frequent bouts of vomiting together with malignancy manifestations such as palpable abdominal mass, lymphadenopathy, jaundice and rectal shelf. Further standard investigation for these patients is upper gastrointestinal endoscopy[12] because of high reliance and safety.[3,13,14] Most of endoscopic diagnoses range from normal mucosa, gastritis, gastric ulcers or duodenal ulcer, in addition to tissue sampling for *Helicobacter Pylori*. In Thailand, the best current method to identify the microorganism is by means of the rapid urease test[15]. The negative test result will need tissue sampling for pathological diagnosis while the positive

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will not, except in case of ulcer that malignancy has to be ruled out by tissue study of the ulcer rim.

H. pylori is a spring-shaped, gram negative bacteria viable on gastric mucosa by producing urease enzyme which catalyzes urea into ammonia and carbon dioxide so that the bacteria could flourish amidst the hostile environment of strong acidity. Research revealed the oral route of bacterial transmission since childhood. Personal hygiene can lessen contact and transmission as evidenced in developing countries where poor sanitation entails in food and water contamination[12,16]. *H. pylori* is taken for granted to play a major role in gastritis and one of the important causative factors of peptic ulcers and a risk to gastric cancer[17]. The Priest Hospital under Medical Division of the Public Health of Thailand has been serving 267,939 monks[18] throughout the country for free. Due to the monastic life and religious practices like early morning receiving alms round, once or twice eating unrequested food offered before mid-day, it is interesting to study any association between ages, endoscopic findings in dyspeptic monks and *H. pylori* infection to contribute to the further care plan.

Materials and Methods

A retrospective study was carried out in 312 dyspeptic monks who received care at the Priest Hospital during March 1, 2008 and February 28, 2011. After approval by the Ethics Committee of the Priest Hospital, their medical records were reviewed including endoscopic data from Surgery Department. Exclusion criteria were upper gastrointestinal bleeding, chronic liver disease, anticoagulant use and advanced cancer. Each patient underwent tissue sampling from gastric antrum and body via the endoscopy for the study of *H. pylori* by rapid urease test and in the case of negative result, the tissue was sent for confirmation by pathological exam. Data in terms of ages, endoscopic findings grouped into normal mucosa, gastritis, gastric ulcer, etc were compared with test results of *H. pylori* and analyzed by both descriptive statistics for demographic data and analytic statistics, Chi-square, for any association between independent and dependent variables with $p < 0.05$ as the statistical significance.

Results

The data of 312 dyspeptic monks who underwent physical exam, upper gastrointestinal endoscopy and tissue sampling for the rapid urease test showed an average age of 62 ± 12.7 years old (range 23-84), 122 infections of *H. pylori* (39.1%). Fifty eight monks under 50 years old (18.6%) of which 18(31%) were infected while those 254 monks over 50 years old (81.4%) had 104 infected cases or 40.9%. No association was found between ages and *H. pylori* infection ($p = 0.163$; Table 1).

Upper gastrointestinal endoscopic findings were as follows: 135 gastritis (43.3%) of which 42 were infected with *H. pylori* (31.1%), 34 gastric ulcers (10.9%) of which 26 were infected (76.5%), 11 gastric cancer (3.5%) of which 8 were infected (72.7%), 5 gastroduodenal ulcers (1.6%) of which all were infected (100%), 18 duodenal ulcers (5.8%) of which 16 were infected (88.9%), 24 duodenitis (7.7%) of which 10 were infected(41.7%) and 85 non-ulcer dyspepsia (27.2%) of which 15 were infected (17.6%). The upper gastroscopic findings were significantly associated with *H. pylori* infection only in terms of gastric ulcer, gastric cancer, gastroduodenal ulcer and duodenal ulcers ($p < 0.05$; Table 2).

Table 1 Association between ages and H. pylori infection

Age (years)	Cases (%)	H. pylori positive n = 122 (%)	pylori negative n = 190 (%)	P
< 50	58 (18.6)	18(31.0)	40(69.0)	
> 50	254(81.4)	104(40.9)	150(59.1)	0.163

Table 2 The associations between endoscopic findings and *H. pylori* infection

n = 312	cases (%)	presence	H. pylori positive (%)	H. pylori negative (%)	p
Gastritis	135 (43.3)	yes	42 (31.1)	93 (68.9)	
		no	80 (45.2	97 (54.8)	0.126
Gastric ulcer	34 (10.9)	yes	26 (76.5)	8 (23.5)	
		no	96 (34.5)	182 (65.5)	0.004*
Gastric cancer	11 (3.5)	yes	8 (72.7)	3 (27.3)	
		no	114 (37.9)	187 (62.1)	0.02*
Gastroduodenal ulcer	5 (100)	-			
		no	117 (38.1)	190 (61.9)	0.009*
Duodenal ulcer	18 (5.8)	yes	16 (88.9)	2 (11.1)	
		no	106 (36.1)	188 (63.9)	0.001*
Duodenitis	24 (7.7)	yes	10 (41.7)	14 (58.3)	
		no	112 (38.9)	176 (61.1)	0.789
Normal	85 (27.2)	yes	15 (17.6)	70 (82.4)	
		no	107 (47.1)	120 (52.9)	0.068

***statistical significance**

Discussion

The incidence of *H. pylori* infection in this study was 39.1%, less than those reported by A Kiatpanapikul et al[19] and U Kachinthorn et al[20]. Monk activities, monastic life, abbot environment and one or twice eating before mid-day are explanatory. Foods offered for alms round, even unrequested for, are usually selected to be clean and well-done since Thai people traditionally believe in good deeds from putting good food into alms bowl. Besides, monks at large have foods with a serving spoon or eat from their own personal bowls, lowering risk to infection. Similarly to the studies of A Kiatpanapikul et al[19] and P Choomsri et al,[21] ages are not significantly associated with *H. pylori* infection. From the age of 50 the incidence is increasing, according to the previous reports that the microorganism is found in all ages, but trended upwards in the elderly, probably due to longer exposure especially in developing countries[12,22].

Our upper gastrointestinal endoscopic findings, not different from previous reports,[23,24] were 43.3% gastritis, 10.9% gastric ulcer, 3.5% gastric cancer, 1.6% gastroduodenal ulcer, 5.8% duodenitis with *H. pylori* infection 31.1, 76.5, 72.7, 100, 8.9 and 41.7% respectively. In Thailand U Kachinthorn et al[20] studied the incidence of the infection to be 45% in either normal or gastritis, 55% in gastric ulcer and 60% in duodenal ulcer while abroad it was reported as high as 80-90%[10-12] in peptic ulcer and gastritis patients. From the study of A Kiatpanapikul et al,[19] the incidence of *H. pylori* was 66.5% in gastritis, 77.5% in gastric ulcer and 90.2% in duodenal ulcer. For non-ulcer dyspepsia, it was 17.6% approximately the same that was reported to be 10-20% by Zagari RM et al.[9] McCarthy C et al[25] found almost all patients with non-ulcer dyspepsia infected with *H. pylori* got better after treatment and supported by other studies to be cost-effective[26] which could be long term management to reduce risk of gastric ulcer, gastritis or gastric cancer in the future[27,28]. There was a report of 6 - folded increase in cancer for patients infected with this microorganism over 10 years[29].

The association between our endoscopic findings in the upper gastrointestinal tract and *H. pylori* infection revealed a statistical significance to be the only involved factor in monks with gastric ulcer, gastric cancer, gastroduodenal ulcer and duodenal ulcer ($p < 0.05$).

Conclusion

Monks presenting with dyspepsia, undergoing upper gastrointestinal endoscopy and tissue sampling

were found to have *H. pylori* infection incidence of 39.1% which arose with age over 50 years. Findings of only gastric ulcer, gastric cancer, gastroduodenal ulcer and duodenal ulcer were significantly associated with the infection. The knowledge has contributed to the care plan for monks in Thailand.

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