

Prevalence of Helicobacter Pylori in Wangaya Regional General Hospital Denpasar, Bali from January to December 2017

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Abstract: *Background: Helicobacter pylori (H. pylori) infection is an important factor to dyspepsia syndrome, peptic ulcer disease and gastric cancer and H. pylori infection is a common worldwide infection. Some studies have evaluated that poor sanitation, age, religion, ethnicity are the risk factors for H. pylori infection. Objective: to describe H. pylori prevalence in patients with dyspepsia symptom who visit endoscopy ward in Wangaya General Hospital Denpasar, Bali from January to December 2017. Design: Retrospective, descriptive study using secondary data from medical records of Wangaya Regional General Hospital patients who came to endoscopy, then did a biopsy to find the presence of H. pylori from January to December 2017. Result: The age group between 41 to 50 years is the most frequent complaints of dyspepsia and suspected with H. pylori infection (22.93%). Out of 157 who had been biopsied, 37 patients (23.57%) showed the presence of H. pylori of which 22 patients were male (59.46%) and 15 patients were female (40.54%). Conclusion: The prevalence of H. pylori infection in Wangaya Hospital Denpasar Bali within the year 2017 was 23.57%, with most of them were male 59.46% and one third of them were elderly between the age of 61-70.*

Keywords: dyspepsia, biopsy, *H. Pylori*

1. Introduction

H. pylori is a gram-negative microaerophilic bacterium that infects the epithelial lining of the stomach.[1] *H. pylori* colonizes the human stomach and can lead to chronic gastritis, peptic ulcer, gastric adenocarcinoma and mucosa-associated lymphoid tissue lymphoma.[2] A meta-analysis study from James said that regions with the highest reported *H. pylori* prevalence were Africa 79.1%, Latin America and Caribbean 63.4%, and Asia 54.7%. In contrast, *H. pylori* prevalence is lowest in Northern America (37.1%) and Oceania (24.4%).[1] Syam et al reported prevalence of *H. Pylori* infection in Indonesia was 22.1%. [3]

H. pylori infection is one of the important factors that can induced dyspepsia symptoms starting from all the symptoms that come from the upper gastrointestinal tract, until reflux symptoms were excluded up to the current definition referring to *Rome IV* criteria. Several meta-analysis studies have shown that there is a correlation between dyspepsia and *H. pylori* infection.[4] Risk factors for acquiring the infection include low socio-economic status, increasing number of siblings, and having an infected parent especially an infected mother.[5,6,7] The prevalence of *H. pylori* in asia is quite high so it needs to be appropriately diagnosed and treated. In organic dyspepsia *H. pylori* eradication has been proven effective in eliminating symptoms, however, further studies are still necessary for functional dyspepsia.[4] Given the association of some important gastrointestinal diseases with *H. pylori*, and recognising that the epidemiology of *H. pylori* infection has potentially changed with improvements in sanitation and exposure to antibiotics, it is important to determine the changing epidemiological characteristics of this pathogen. Such information may facilitate clinical practice and management decisions regarding the infection.

2. Methods

This was a retrospective, descriptive study using secondary data from medical records of Wangaya Regional General Hospital patients who came to endoscopy, then did a biopsy to find the presence of *H. pylori* from January to December 2017. Patients with symptoms of dyspepsia according to *Rome IV* criteria who have endoscopy then biopsy were included in the study. Patient demographic data is recorded.

3. Results

From the data that has been collected, there were 343 patients who met the included criteria of dyspepsia and have endoscopy, and there were 157 patients were suspected *H. pylori* infection and have biopsied. We found the result shown in the table below.

Table 1: Biopsied Patients' Age Group

Age	N	%
< 20	1	0.64 %
20 – 30	24	15.29 %
31 – 40	23	14.65 %
41 – 50	36	22.93 %
51 – 60	29	18.47 %
61 – 70	30	19.11 %
71 – 80	14	8.92 %
total	157	100.00 %

Table 2: Biopsied Patients' Gender Group

Gender	N	%
Male	82	52.23 %
Female	75	47.77 %
Total	157	100.00 %

It shown that the age group between 41 to 50 years old are the most frequent patients who suspected *H. pylori* and got

Volume 7 Issue 9, September 2018

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biopsied (22.93%), and in the male group (52.23%) were more common than the female group (47.77%)

Table 3: Biopsy Result

<i>H. pylori</i>	N	%
Positive	37	23.57 %
Negative	120	76.43 %
Total	157	100.00 %

Out of 157 endoscopic patients who had been biopsied, 37 patients (23.57%) on histology examination showed the presence of *H. pylori*.

Table 4: *H. pylori* Infected Gender Group

Gender	N	%
Male	22	59.46 %
Female	15	40.54 %
Total	37	100.00 %

From 37 patients that were positive *H. pylori*, 22 patients were male (59.46%) and 15 patients were female (40.54%).

Table 5: *H. pylori* Infected Age Group

Age	N	%
< 20	0	0.00 %
21 – 30	2	5.41 %
31 – 40	5	13.51 %
41 – 50	8	21.62 %
51 – 60	7	18.92 %
61 – 70	13	35.14 %
71 – 80	2	5.41 %
Total	37	100.00 %

According to this data, the age group between 61 – 70 years old are the most frequent patients who have positive *H. pylori*

4. Discussion

The epidemiology of *H. pylori* has been changing over the past decades, with a decrease in the prevalence of infection in most countries.[3] The changing epidemiology of the bacterium has been associated with the decline in peptic ulcer disease and gastric ulcer.[3] A Malaysian study reported by Leow et al. found that between the period of 1989–1990, the overall prevalence of *H. pylori* was 51.7%. This prevalence decreased to 30.3% in the second period, 1999–2000, and to 11.1% in the third period, 2009–2010 ($p<0.001$).[10] Some studies also evaluated the risk factors for *H. pylori* in Indonesia. A study by Darnindro et al. showed that the lower the sanitation status, the higher the risk of *H. pylori* infection. [9]

Our study, conducted over the data of Wangaya Regional General Hospital in the period of January to December 2017, involved a total of 343 patients with dyspeptic symptoms who then received endoscopy examinations. 157 of them got biopsy. The study showed that adults in the age between 41–50 were the most likely to be suspected from *H. pylori* and get biopsy (22.93%). According to another study by Syam et al., the most frequent patients suspected with *H. pylori* were those between the age of 40-49. [8]

Out of 157 biopsied patients suspected with *H. pylori*, 37 (23.57%) were positively infected with *H. pylori* based on the histology. Syam et al. reported that in their study, the prevalence of *H. pylori* infection was 22.10% and 15.40% was confirmed by using histology examination.[8]

Out of 37 *H. pylori* infected patients, 22 (59.46%) were male and 15 (40.54%) were female, there is a slight difference in the prevalence of men and women, in men there is a higher prevalence. From observational meta-analysis, population based studies, men were slightly more likely to be *H. pylori* positive than women [11], this was confirmed by a study in Canada in which the overall seroprevalence was 23.1% but higher in men (29.4%) than women (14.9%).[12] One explanation that has been proposed for the lower seroprevalence in women is that they may be more likely to clear *H. pylori* infection because of higher rates of incidental antibiotic use for other indications.[11] More than one third of them (35.14%) were between the age of 61-70. Such infections to the elderly usually are caused by their lack of hygiene awareness.

5. Conclusion

Based on the data of Wangaya Regional General Hospital's patients between the period of January to December 2017, 343 patients suffering from dyspepsia syndrome went under endoscopy examinations. 157 of them were suspected with *H. pylori* and got biopsy.

Out of those 157 patients, 31 patients (23.57%) were confirmed as infected with *H. pylori*. 59.46% of them were male, while 40.54% were female. More than one third of them (35.14%) were elderly between the age of 61-70.

From all these data, we can see that the prevalence of *H. pylori* infection handled by Wangaya Regional General Hospital within the year 2017 was 23.57%, which is quite a high number. It is our hope that this study will increase our awareness to *H. pylori* infection, so that some socialization can be done for the society – especially for our elderly.

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