

# Prevalence of IgG anti H Pylori Among Nurses of Wangaya Hospital Denpasar by Immunochromatography Method using M Bio Pylori Rapid Test

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**Abstract:** *H. pylori* colonization in individuals always lead to chronic gastritis. Medical staff such as nurses, who daily contact with infectious material such as feces, blood, vomit of food and drinks have a greater possibility contaminated by *H. pylori* bacteria. A few research about prevalence of *H. pylori* infection in hospital staff reported. We reported a prevalence study of IgG anti *H. pylori* among nurses of Wangaya Hospital Bali Denpasar. The prevalence of IgG anti *H. pylori* among nurses in Wangaya Hospital Bali is 3,33% base on immunochromatography method using M Bio Pylori rapid test.

**Keyword:** *H. pylori*, rapid test, M Bio Pylori kit

## 1. Introduction

*Helicobacter pylori* (*H. pylori*) infection is associated with various gastrointestinal diseases including gastritis, peptic ulcer, gastric carcinoma and gastric mucosa-associated lymphoid-tissue lymphoma.<sup>1-4</sup> *H. pylori* infection has been classified into class I carcinogens in humans by the International Agency for Research on Cancer consensus group since 1994. *H. pylori* infects nearly 50% of the world's population. As much as 80% of colonization of *H. pylori* in gaster is asymptomatic, only 20% of infected patients show symptoms.<sup>5-8</sup> *H. pylori* infection symptom, mostly asymptomatic although mild to severe gastric chronic inflammation find in pathological gaster biopsy. Approximately 10% of those infected with *H. pylori* will develop into peptic ulcer, 1 to 3% will develop into gastric adenocarcinoma and less than 0.1% develop into MALT (mucosa associated lymphoma tissue) lymphoma. *H. pylori* colonization in individuals will always lead to chronic gastritis.<sup>5,8,9</sup> Medical staff such as nurses, who daily contact with infectious material such as feces, blood, vomit of food and drinks have a greater possibility contaminated by *H. pylori* bacteria. A few research about prevalence of *H. pylori* infection in hospital staff reported.

The purpose of this study was to obtain the prevalence of *H. pylori* infection among nurses) examining Ig. G anti *H. pylori* by immunochromatography method using M Bio Pylori Mataram rapid test.

## 2. Method

This is a cross sectional study. Simple random sampling method using to determining samples. The samples size is 60 peoples. All samples are nurses who working in Wangaya Hospital Denpasar Bali. Before conducting the research, all samples signed the inform concern. This study approved by ethics committee of Wangaya Hospital Denpasar. Five cc of blood taken from each samples and dropped in a tube without

anticoagulant and then centrifuged. Then 10 microliter serum taken with a microliter pipette. The serum dropped within the M Bio Pylori rapid test kit as a kit protocol. M Bio Pylori kit from the Biomedic Laboratory Mataram Hospital, West Nusa Tenggara, Indonesia. The result will be seen as positive (two red lines transverse) or negative (only one red line transverse). The study conducted during September to October 2016. The data analyzed descriptively to know the distribution of sex, age group and prevalence of Ig G Positive to *H. pylori* infection.

## 3. Result

Selected samples of males and females with the same number, 30 peoples each shown on this table 1 below.

**Table 1:** Samples distribution of base on gender

Sex	N	%
Male	30	50
Female	30	50
Total	60	100

**Table 2:** Samples distribution base on age group

Age group (year)	N	%
15-25	20	33,33
26-50	40	66,66
Total	60	100

Table 2 shown that 66% of samples were 26 to 50 age group, and 33.33 percent were between 15 to 55 age group.

**Table 3:** Result of IgG anti *H. pylori* test using M Bio Pylori rapid test

IgG anti <i>H. pylori</i>	N	%
Positive	2	3,33
Negative	58	96,66
Total	60	100

We found positive results on 2 samples only (3.33%), negative results on 58 samples (96.66%).

#### 4. Discussion

Recently, type of *H. pylori* infection diagnostic test consisting of non invasive such as IgG, IgA anti Hp, urea breath test: 13C, 14C, fecal stool antigen and invasive / endoscopy, using endoscopic tool to take a gastric mucosal tissue biopsy for urease test examination, CLO, histopathology, microbiological culture, polymerase chain reaction. Serologic examination is widely used in epidemiological studies because it is relatively cheap and can be accepted by asymptomatic patient groups or children who do not want to be examined in an invasive manner such as gastroscopy. This method is often used for epidemiological studies or for evaluation before eradication therapy. The technique used in this study is immunochromatography method using M Bio Pylori kit. We found positive result only in two peoples in this study due to there is no dyspepsia symptoms in our research subject. The other reason due to the influence of different local antigen factors or the consequent low titer. The sensitivity of the M Bio Pylori kit need to further evaluation for other ethnics in other islands in Indonesia because the antigen that used maybe different.

#### 5. Conclusion

Prevalence of IgG anti *H. pylori* among nurses in Wangaya Hospital Denpasar based on rapid test that using M Bio Pylori Kit is very low (3,33%).

#### References

- [1] Hagymasi, 2014. *Helicobacter pylori* infection: new pathogenic and clinical aspect. *World J Gastroenterol*, June; 20: 6386-6399.
- [2] Malfertheiner P, Megraud F, O'Morain CA, *et al.* 2012. Management of *Helicobacter pylori* infection--the Maastricht IV/ Florence Consensus Report. *Gut*; 61: 646-664.
- [3] Rani, A.A. 2013. Infeksi *Helicobacter pylori* dan penyakit gastroduodenal, Buku Ajar Ilmu Penyakit Dalam, Sudoyo, AW, Setiyohadi, B (ed). Jilid I edisi IV. 328-3.
- [4] Suerbaum, S., & Michetti, P. 2002. *Helicobacter pylori* infection. *New England Journal of Medicine*, 347(15), 1175-1186.
- [5] Yamaoka, Y. 2012. Pathogenesis of *Helicobacter pylori*-related gastroduodenal diseases from molecular epidemiological studies. *Gastroenterology research and practice*, 2012.
- [6] Ford AC, Moayyedi P. Dyspepsia. *Curr Opin Gastroenterol*. 2013;29:662-8.
- [7] Miwa H, Ghoshal UC, Gonlachanvit S, *et al.* Asian consensus report on functional dyspepsia. *J Neurogastroenterol Motil* 2012;18:150-68.
- [8] Syam AF, Abdullah M, Rani AA, *et al.* Evaluation of the use of rapid urease test: Pronto Dry to detect *H. pylori* in patients with dyspepsia in several cities in Indonesia. *World J Gastroenterol* 2006;12:6216-8.
- [9] Testerman, T.L. and Morris, J., 2014. Beyond the stomach: an updated view of *Helicobacter pylori* pathogenesis, diagnosis, and treatment. *World J*