

Prevalence of Helicobacter Pylori Antibodies in Endoscopy Personnel and Non-Medical Volunteers of Karachi

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Abstract

Prevalence of Helicobacter pylori (Hp) is high in developing countries. As endoscopy personnel are at greater risk of exposure to gastric secretions, they are apparently at higher risk of acquiring this infection. The aim of this study was to determine prevalence of Hp antibodies in endoscopy staff and compare it with non-medical volunteers and assess any additional risk of occupational exposure to Hp in the former group. Thirty-three subjects working in endoscopy suites of different hospitals of Karachi and 33 non-medical volunteers were investigated for the prevalence of Hp antibodies by using a commercially available rapid qualitative test (FlexPack HP; Abbott). The two groups were comparable in mean age, sex and social class. Twenty-six of 33 (79%) of the endoscopy personnel and 19/33 (58%) of the non-medical volunteers were positive for Hp serology ($p=0.06$ R.R 1.37). Among the endoscopy personnel 13/14 (93%) of endoscopy assistants were positive and this subgroup had a significantly higher prevalence of lip antibodies as compared to the control group ($p=0.019$). No correlation could be found between the positive serology and symptoms of dyspepsia (JPMA 48: 201, 1998).

Introduction

Helicobacter pylori (H. pylori) is the main etiological agent for antral gastritis and plays a leading pathogenic role in duodenal ulcers and majority of non-NSAID gastric ulcers^{1,2}. There is a significant association between H. pylori infection and mucosa associated lymphoid tissue lymphomas (MALTOMAs)³ and gastric cancer⁴.

There is high prevalence of H. pylori in the developing world where people have low socio-economic status and live in an unhygienic environment⁵. H. pylori thought to be transmitted by faecal-oral or oral-oral route¹. Staff working in the endoscopy suite may be at greater risk of direct exposure to gastric secretions so the prevalence of H. pylori among this group might be higher. Some recent studies have shown a high prevalence of H. pylori among endoscopy workers, while others do not support it⁶⁻⁹. This study was done to find out the prevalence of H. pylori antibodies in the endoscopy staff. Other objectives were to determine antibody positivity in non-medical volunteers and asymptomatic individuals of both groups.

Methods

Thirty-three doctors, nurses and nursing aids working in the endoscopy suites of different hospitals of Karachi were tested for antibodies to H. pylori in their blood. Nineteen were doctors and 14 were nurses and nursing assistants. Same number of non-medical subjects who were friends and neighbours of the endoscopy personnel were taken as control group. Controls were comparable in age, sex and social class.

A commercially available rapid qualitative in-office test FlexPack HP (Abbott) was used for serology. It detects IgG antibodies to H. pylori in whole blood by using the principle of reverse flow

chromatography. It has about 90% sensitivity and specificity relative to urea breathe test¹⁰. Statistical analysis was done using Chi square test. Fisher exact test and Students' t test.

Results

Demographic data of the two groups is given in Table I.

Table I. Demographic and other characteristics of endoscopy personnel and non-medical subjects.

	Endoscopy personnel (n=33)	Non-medical subjects (n=33)
Age (years)		
Mean±S.D.	35.2±6.6	36.5±10.5
Sex		
Male	29	29
Female	4	4
Education		
Graduation or more	25	25
Dyspepsia	11	11
Positive serology	26 (79%)	19 (58%)

The H. pylori antibody prevalence among the endoscopy personnel was 79% (26/33) and in the control group 58.1% (19/33). The difference did not reach the statistically significant value but showed a trend (p=0.06, R.R. 1.37). The prevalence in nurses and nursing assistants was significantly higher: 93% (13/14) (Table II)

Table II. Characteristics of endoscopy personnel.

	Positive serology (n= 26)	Negative serology (n= 7)
Age (years)		
mean±S.D	35.0±7.2	36.1±3.7
Education (graduation or more)	19 (73)	6 (86)
Dyspepsia	8 (31)	3 (43)
Duration of symptoms (years)	1.1±2.3	1.4±2.0
Duration of working with endoscopies	6.0±4.0	4.3±2.0
Gloves wearing habits	18 (69)	5 (71)
Doctors (n= 19)	13 (68)	6 (32)
Nurses and assistants (n= 14).	13 (93)	1 (7)

Percentage in paranthesis.

than in non-medical control group (p=0.019, R.R=1.61). Sixty-eight percent (13/19) doctors were positive for H. pylori. Comparing this sub-group with the control did not show any difference (p=0.43). Data of both groups was pooled to compare the characteristics of seropositive and seronegative subjects (Table III).

Table III. Pooled data of both groups comparing seropositive and seronegative subjects.

	Positive serology (n=45)	Negative serology (n=21)
Age (years)	36.5±9.0	34.6±8.1
Education: graduation or more	32 (71)	18 (86)
Dyspepsia	12 (27)	9 (43)
Duration of symptoms (years)	0.79±1.9	0.82±1.4

Percentage in paranthesis.

There was no significant difference in the mean age, educational status, presence of dyspepsia and duration of symptoms. *H. pylori* antibodies were present in 57% (12/21) of symptomatic subjects and 73% (33/45) of asymptomatic individuals.

Discussion

H. pylori is transmitted by faeco-oral and oro-oral route¹. Standard of hygiene and socio-economic status are important factors predicting the prevalence of infection. In some developing countries, over 80% of asymptomatic 20-year old subjects are infected^{5,11}. It is known that infected gastric secretions may cause epidemics of gastritis¹². Nosocomial transmission between patients undergoing endoscopy has also been reported¹³. As endoscopy personnel are at greater risk of exposure to gastric secretions, they are apparently at higher risk of acquiring this infection. Studies in favour and against are available⁶⁻⁹.

This study shows a higher prevalence of positive serology for *H. pylori* both in the endoscopy personnel and non-medical subjects (79% vs. 58%, =OA)⁶. Though the study did show a trend of higher prevalence in the endoscopy personnel, analysis of subgroups showed that only the nurses and nursing assistants were at a higher risk, but not the doctors. No difference was found in the duration of working with the endoscopes and the glove wearing habit of two sub-groups. The only difference could be that nurses and nursing assistants in Pakistan came from lower socio-economical status. As the acquisition of *H. pylori* occurs during the childhood¹⁴, they could have acquired this infection during that period while living with their families in small—overcrowded houses.

This study indicates that symptoms of dyspepsia and positive serology do not correlate with each other. Only 27% of subjects with positive serology were symptomatic and in symptomatic subjects the prevalence of seropositivity was 57% (12/21) as compared to 73% (33/45) in asymptomatic individuals. So any screening program which is focussed on screening only symptomatic subjects will miss a significant number of *H. pylori* positive subjects who are asymptomatic.

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