



Incidence of *H. pylori* in all Endoscopies Done at Saveetha Medical College over the Last Two Years (2018-2020)

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Background: *H. pylori* infection is a major health ailment in most of the developing countries. The infection is associated with increasing morbidity and mortality ranging from chronic gastritis to gastric malignancies. The aim of this study is to assess the prevalence of *H. pylori* among patients tested positive for the same in Saveetha Medical College, Thandalam over the period of 2018-2020 and assess the incidence with factors like socioeconomic status, age and sex of the patients.

Objectives:

- To determine the incidence of *H. pylori* for the patients who tested positive for the same over the period of 2018-2020.
- To assess the patients infected with *H.pylori* for various factors like age, sex and socioeconomic status.

Materials and Methods: It is a retrospective type of study. The patients who tested positive for *H. pylori* infection in Saveetha Medical College over the period of 2018-2020 was taken into study. A total of 300 *H. pylori* infected patients were assessed for various factors like age, sex and socioeconomic status.

Results: Out of 300 patients who tested positive for *H.pylori* were categorized based on age sex and socioeconomic status. Among 300 infected patients, 230 turned out to be men while only 70 cases seen among women. The prevalence was high among the age group > 60 (n=150; 50%) while the 40-60 recorded the second highest number of cases (30% n=90). 20-40 was the least affected group. Most of the cases were associated with low socioeconomic status, alcohol and smoking which contributes to the increased risk of acquiring the *H. pylori* infection.

Conclusion: The incidence of *H. pylori* infection is high among the study group. Hence it is essential to provide prompt treatment and take adequate measures to prevent the risk factors.

Keywords: H. pylori; low socioeconomic status; prevention.

1. INTRODUCTION

Helicobacter pylori, originally classified as Campylobacter pylori, is a Gram-negative, microaerophilic, spiral-shaped, motile bacterium. It is often associated with gastritis, peptic ulcer, duodenal ulcer and chronic gastritis. It is also involved in the development of gastric cancer.

Its transmission occurs in various ways, including oral-oral and faecal-oral routes [1]. Person-to-person contact is considered the most likely transmission route. Prevalence of H pylori is said to be higher in developing countries. An increased prevalence of infection has been associated with food prepared under unhygienic conditions as a probable cause for transmission. In adults of industrialized countries, an estimated 0.5% of the susceptible population becomes infected annually. This incidence has been decreasing over time. Thus, adults who currently harbor the organism are more likely to possess infection in childhood than adulthood. The incidence of *H. pylori* infection continues to be high (between 3% and 10% per year) in developing countries. Throughout the world, incidence of *H.pylori* infection appears to be higher in children than in adults, possibly because of lower standards of personal hygiene in younger populations. The infection primarily involves the upper alimentary canal leading to progressive acute and chronic gastro-duodenal inflammation [2].

Here we report findings from a retrospective study done in Saveetha Medical College, India. All patients underwent upper gastrointestinal endoscopy; rapid urease test was done on gastric mucosal biopsy to detect *H. pylori*. The clinical, demographic features and socioeconomic status were recorded.

The aim of this study were to understand the incidence of *H. pylori* among various age groups,

sex and socioeconomic status among patients recorded positive for *H. pylori* in our institution and interpret the data.

2. METHODS

2.1 Study Design

It is a retrospective type of study. The Patients who tested positive for *H. pylori* in our institution were categorically questioned and details were collected.

2.2 Study Location

This study was carried out in Saveetha Medical College, Thandalam, Chennai. This study was approved by Saveetha Medical college and hospital, Institutional Ethics committee, Saveetha nagar, Chennai.

2.3 Data Collection

A total of 300 patients aged 21-80 who came with gastrointestinal complaints and tested positive for *H. pylori* infection was recruited in this study. Data was collected from patients who tested positive for *H. pylori* in endoscopies performed over the last two years from 2018-2020 in Saveetha Medical college and Hospital, Chennai. Endoscopy performed was considered positive, if it was positive in biopsied sample by histopathological examination.

2.4 Sample Size Collection

We based our sample size calculations assuming the following parameters: Alpha error =0.5, power = 90% expected effect size : odds ratio = 2.1. Our sample size was approximately 320 cases. Of which 300-cases recorded in the hospital over two years from 2018-2020 was taken.

3. RESULTS

3.1 Sex

In our study we found that there is higher prevalence of cases among male than in female patients. Out of 300 cases recorded over 230 men were reported positive for *H. pylori* infection and the remaining 70 were female patients.

3.2 Age Group

A total of 300 patients were enrolled in the study. All age groups ranging from 21 – 80. The mean age group of the study was 51 years. Out of which 30% (n=90) of the cases were recorded between 40-60 age group. Most commonly affected age group was > 60 years of age in which a total of 150 cases were recorded of of 300. While the least affected group in this study was between 20- 40 age group in which only 20% (n= 60) cases were seen out of 300 infected patients. Majority of the infection recorded beyond 60 years of age group was among males.

3.3 Socioeconomic Status

The socioeconomic characteristics like income and education, family history and personal habits

including smoking drinking, alcohol and betel chewing are listed below. The *H. pylori* infected group contained a higher proportion of married individuals, with higher rates of alcohol consumption and betel chewing but lower family income and education levels. The proportion of subjects infected increased with increasing number of cigarettes smoked. Married individuals were more likely to be infected with *H. pylori*. Overcrowding is associated with increased incidence of *H. pylori*. There is no significant link between family history and *H. pylori* incidence. However 70 patients enrolled in this study had a positive family history of *H. pylori* infection.

4. DISCUSSION

Acute *H. pylori* infection usually passes undetected. Hence, the incidence of infection has been determined indirectly from epidemiological studies.¹ Epidemiological studies have shown that areas with high gastric cancer rates often have a correspondingly high prevalence of *H. pylori*. Once acquired, the *H. pylori* infection persists for life if not treated and is responsible for major morbidity and mortality throughout the world [2].

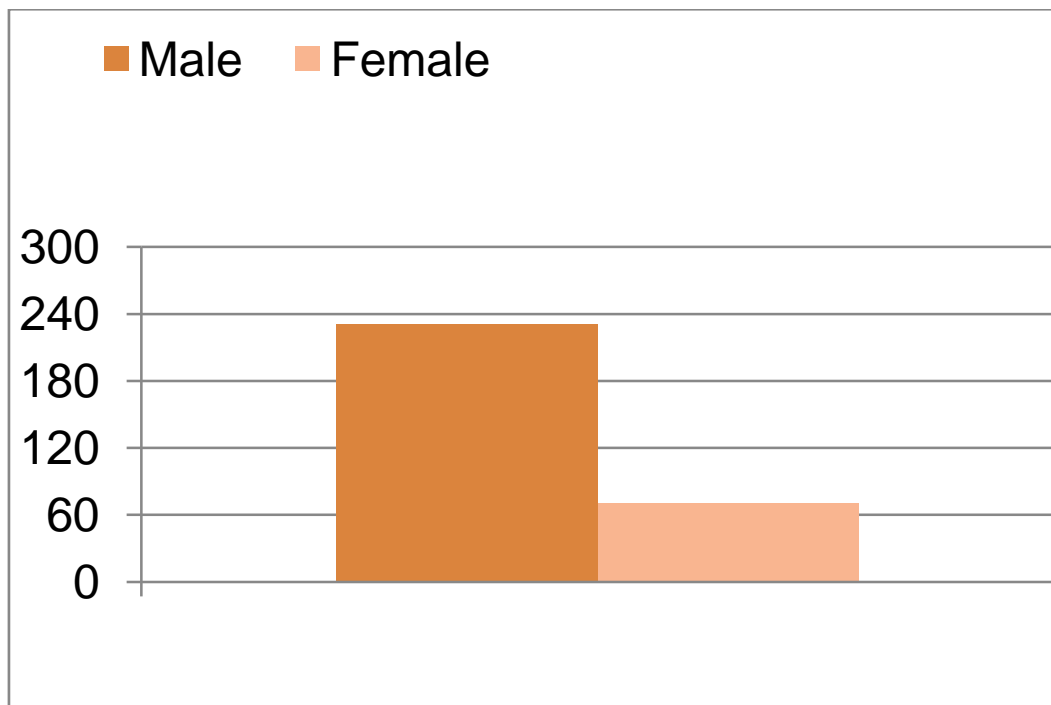


Fig. 1. Male and female ratio

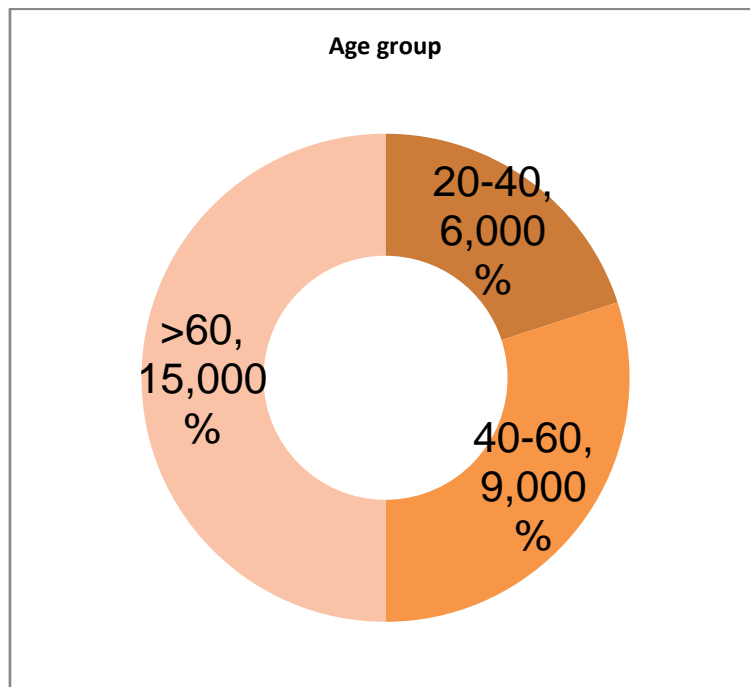


Fig. 2. Pie chart showing age group

Table 1. Socioeconomic characteristics

Characteristics	Number
Education	
Illiterate	90
Primary school	75
Middle school	60
High school	35
Diploma	25
Graduation	10
Professional degree	5
Socioeconomic class	
Upper	5
Upper middle	15
Lower middle	35
Upper lower	91
Lower	154
Alcohol	245
Non alcoholics	55
Smokers	155
Non smokers	145
Betel chewing	55
Marital status	
Married individuals	250
Non married individuals	50
Family members	
>6	145
<6	155
Family history	
Positive	75
Negative	225

In this study, incidence was high among men compared to women. Out of 300 participants involved in the study 230 *H. pylori* infected cases were among Men. Only 70 cases were women. Data from previous studies suggested an increased prevalence of *H. pylori* infection in men compared with women but it frequently did not reach statistical significance. It suggests that the odds of being *H. pylori* positive increase by 15% in middle-aged males. The reason for the possible gender difference in *H. pylori* prevalence is unclear but may relate to young boys having poorer hygiene than young girls [3]. According to study done by AR KHAN, *H. pylori* infection acquired early in life, leads to multifocal gastritis and thus predisposing the patients to gastric cancer later in life [4].

Previously done seroprevalence studies also support a tendency for men to have a higher risk of infection. Diseases associated with *Helicobacter pylori* infection, such as peptic ulcer disease and gastric cancer, afflict men more frequently than women [5].

In this study most of the cases recorded were > 60 years of age. Around 30% of the cases were seen between 40-60. Only 20% cases were seen between 20-40 years. The prevalence of *H. pylori* infection increases with age in both developed and developing countries [6]. The high age-specific prevalence of *H. pylori* infection in developing countries is probably a reflection of the lower socioeconomic level of those areas [7].

This study has confirmed that childhood socioeconomic deprivation and overcrowding are important determinants of the prevalence of *H. pylori* infection as others have shown. Number of siblings was a strong predictor of infection suggesting that transmission between siblings is an important mode of acquisition [8]. This is consistent with the observation that individuals of higher birth order have an increased prevalence of *H. pylori*, particularly if the age gap between siblings is small.

Low education and heavy smoking are most strongly associated with prevalence of *H. pylori* positivity in adults and adolescents. The *H. pylori*-infected patients recorded in this study contained a higher proportion of married individuals, with higher rates of alcohol consumption and betel chewing, but lower family incomes and educational levels. Lack of personal hygiene and low socioeconomic status are major factors contributing to *H. pylori* infection. Teh

et al suggested that poor water supply systems, improper sewage disposal, and other environmental hygiene factors in aboriginal townships might contribute to the acquisition of infection [9]. In many countries, the incidence of HP infection has been decreasing in association with improved standards of living [10]. The prevalence remains high in most developing countries and is generally related to socioeconomic status and levels of hygiene [11,12].

Hence the present study establishes the age group and sex that is commonly affected. Also the factors that can lead to *H. pylori* infection.

5. CONCLUSION

Exposure to *H. pylori* occurs early in India and is widespread. The present study certainly establishes the burden of *H. pylori* in the society. The incidence of *H. pylori* infection is high among the study group. Hence it is essential to provide prompt treatment and take adequate measures to prevent the risk factors.

CONSENT AND ETHICAL CONSIDERATION

Before starting the study, the Institution Review Board of Saveetha University has approved our protocol, later grant sanction form was obtained from HOD's of all department. Further informed oral consent was obtained from all the patients before they were included in the study.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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