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FREQUENCY OF *H. pylori* INFECTION IN POPULATION HAVING ACID PEPTIC DISEASE: A STUDY FROM JUNK FOOD CONSUMERS

ALI SB[3], SIRAJ S[1], HAFSA HT[2], SHAHZAD M[4], MASOOD A[5], QAISER A[2], ALI A[7], HASSAN S[6], MALIK A[6], ALYAS S[6], *HAFEEZ MM[6]

1: Department of Pathology, Sahiwal Medical College, Sahiwal, Pakistan

2: Department of Microbiology, Shaikh Zayed Hospital, Lahore, Pakistan

3: Department of Pathology, Services Institute of Medical Sciences, Lahore, Pakistan

4: Department of Pathology, Sahiwal Medical College, Sahiwal, Pakistan

5: WAPDA Hospital, Faisalabad, Pakistan

6: Institute of Molecular Biology and Biotechnology, The University of Lahore, Lahore-Pakistan

7: Punjab Institute of Cardiology, Lahore, Pakistan

***Corresponding Author: Ahmad Ali: E Mail: mansoorhafeez140@gmail.com**

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ABSTRACT

Helicobacter pylori (*H. pylori*) is a bacterium that is known to induce multiple gastric issues, it is a gram-negative pathogen that enhances stomach acid deposition causing stomach and duodenum ulcer that can lead to many other disorders including Zollinger Ellison syndrome (ZES), gastroesophageal reflux disease (GERD), etc. A study was conducted on population of Islamabad (n=1000 i.e., 500 males and 500 females) having junk food in their diet either daily, per week, or in 15 days and those visiting OPD of different hospitals with having complain of acidity, to find out either the acidity was due to *H. pylori* or not, and found out that in majority of population *H. pylori* is the cause behind acidity, thus indicating the increased prevalence of *H. pylori* in the population having acidity issues, for which several measures should be taken.

Keywords: *Helicobacter pylori*, Acid Peptic Disease, Stomach Ulcers, gastroesophageal Reflux Disease

INTRODUCTION

Secretion of acid by specific cells in response to the food is a normal physiology of human stomach in order to activate the certain enzymes. These enzymes are necessary for the proper digestion of meal. Diseases such as gastro esophageal reflux disease (GERD), esophageal ulcer, gastric ulcer; gastritis, duodenal ulcer, Zollinger Ellison syndrome (ZES) and Meckel's diverticular ulcer are collectively represented by the term acid peptic diseases **[1]**. That leads to excessive production of acid in response to food or other stimuli such as stress, infection, junk food or certain medications. The major complications of peptic ulcer disease are perforation and hemorrhage which may result in high mortality of patients with this disease **[2]**. Patients with dyspepsia symptoms require to be investigated. Endoscopy is the gold standard investigation for the diagnosis of acid peptic disease (APD) **[3]**.

Till the end of 20th century Peptic ulcer disease had an exponential effect on morbidity and mortality due to unknown pathology of the disease **[4]**. With the discovery of ant-acid medicine, scientist put a millstone towards the down fall in mortality due to APD. The discovery by various pathologists that a spiral shaped organism (which was later named as *H. pylori*) is one of the major risk factors behind acid peptic disease helped in minimizing the extent of the disease **[4]**. Discovering infection and identifying predisposing factors are all vital to eradicating the disease **[5]**. *Helicobacter pylori* tend to attack the gastric mucous membrane and cause ulcers in the lining of the stomach and duodenum. *H. pylorus* penetrates the gastric lining where they are protected by the mucus produced by the cells secreting the residual mucus and therefore the body's immune system could not attack them. For example, diseases like gastritis, peptic ulcer and stomach cancer are caused by this organism **[6]**. Patients with gastro duodenal diseases such as low grade gastric and peptic ulcer disease, mucosal lymphoid tissue (MALT) lymphoma; patients with atrophic gastritis; first degree relatives of patients with gastric cancer; patients with unexplained iron deficiency anemia; and patients with chronic idiopathic thrombocytopenic purpura are recommended to be treated by the eradication therapy **[7]**. For the eradication of the bacterium there is a diet (as per the NICE guidelines) that includes antibiotics and proton pump inhibitors that successfully eradicate the bacteria and therefore minimize the symptoms of APD **[8]**. Whereas, as far as acid peptic disease is

concerned, H2-receptor antagonists are the main line of treatment but other antacids are also used for the purpose of treatment varying from person to person such as in hypersecrtion of acid Omeprazole is preferred, while in smokers Sucralfate should be prescribed and for alcoholics Femotidine is used **[9]**. Foods fall into two categories called healthy food and junk food **[10]**. Healthy foods can be defined as foods that help meet the body's primary nutrient and caloric demand. Whereas junk food can be defined as food that is full of fat and carbohydrates, which leads to obesity, coronary heart disease and also acid peptic diseases **[10]**. Increased consumption of soft drinks and alcohol can affect increasing rates of gastroesophageal reflux in patients **[11]**.

The purpose of this study is to determine the effect of *H. pylori* in the population suffering from acid peptic illness, especially in the population with increased consumption of junk food.

METHODOLOGY

This was a cross-sectional study in which we targeted patients visiting outpatient medical services at major public sector hospitals in Karachi. Patients had complaints of acid and superior gastrointestinal discomfort. We collected data in the form of a survey and then collected their sample for H. pylori. The sample size was n=1000, of which 500 were men and 500 were women to have an equivalent population. First a questionnaire with 15 questions was handed out, the question is general in a sense that they are related to their lifestyle. Acidity issues associated with junk food were examined to determine the prevalence of *H. pylori* amongst the sample. After that, a sample was taken for H. The tests and results were established.

The data were coded and analyzed in SPSS version 16.0 and various tests are applied to determine that prediabetes is a sleeping factor inside the body.

RESULTS/ ANALYSIS

In our study total data contains 500 males and 500 females, from different social class and backgrounds from population of Islamabad, visiting OPD of different hospitals **(Table 1)**.

442 males out of 455 and 435 females out of 445 are having acid peptic disease, from which 392 and 355 males and females are having *H. pylori* as a reason of acid peptic disease respectively **(Table 2)**.

Table 1: Shows Total Population of Males and Females Having Acidity Problems, And Positive *H. pylori* result Among Target Population

Gender	Frequency	Positive Result of H. pylori
Male	**500**	**392**
Females	**500**	**355**

Table 2: Reflects number of males and females that are consumers of junk food, which is further divided in to the frequency of consumption among junk food eaters, so 392 males and 355 females out of 500 are junk food consumers

Gender	Junk Food Consumer /500	Frequency			APD	*H. pylori* positive
		/day	/week	/15 days		
Males	455	143	205	107	442	392
Females	445	221	130	94	435	355

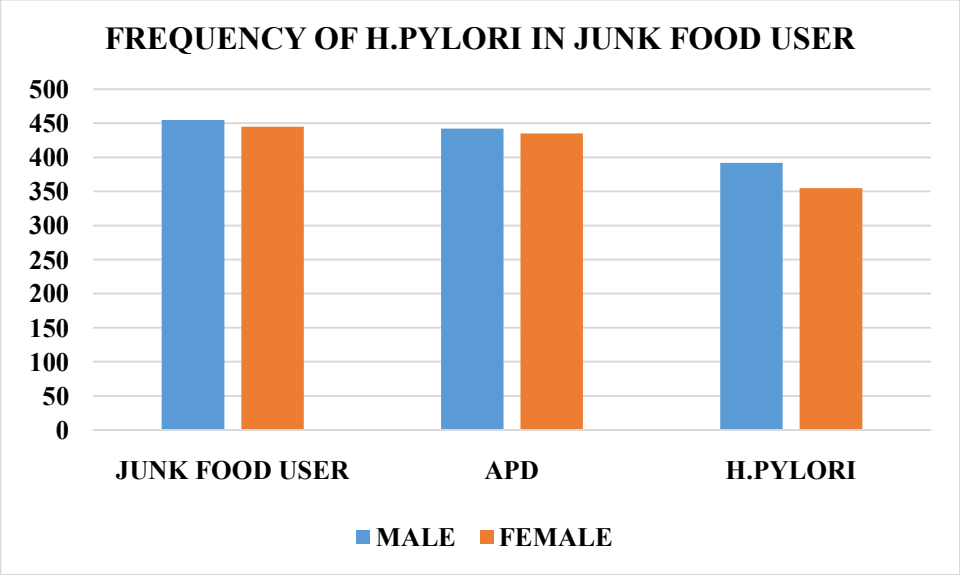

Figure 1

DISCUSSION

The results showed that the incidence of *H. pylori* in our population is quite high and the data show its obvious association with acidic peptic disease. Its appearance is mostly very devastating in the developing population among those who consume junk food, because it is one of the most dangerous predisposing factors. It is evident from the fact that out of 500 population samples of males and females each, approximately 442 males and 435 females had ODA and *H. pylori* reflecting both the strong connection between H. The infection at Pylori leads to APD.

People who are familiar with drinks containing caffeine such as soft drinks are predisposed around *H. pylori* infection as it causes gastric pH to the acidic scale and it is the most appropriate and supportive environment for this bacterium to maintain its existence. This was approximately in accordance with the fact that out of 1000 individuals (500 males and 500 females) who had symptoms of acidity, 877 were diagnosed with acid peptic disease and 747 were found to harbor *H. pylori* in their gastro-intestinal tract **[3-6]**.

The connection between junk food use and *H. pylori* positive peptic acid illness turns out to be directly proportional which deciphers the fact that among 392 men 355 had *H. pylori* infection, while the ratio in females was also supportive of this fact, because of 355 females had *H. pylori* infection **[12-17]**.

Men, especially the unemployed and students, are more susceptible to APD and *H. pylori* infections because they have a larger proportion of junk food and beverages in their regular diet than women either they are students, housewives or working women. Unemployed individuals and students are probably more inclined to it due to stress which is yet another important factor in the stimulation of acid secretion of the gastric mucosa and predisposed to APD **[18-29]**.

CONCLUSION

Of the above discussion it could be concluded undoubtedly that *H. pylori* is closely linked to acid peptic disease. It also facilitates the fact that people who consume junk food and beverages are susceptible to both acid peptic disease and H. pylori.

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