INTRODUCTION

Helicobacter pylori infections are the most common human infections worldwide. These are more prevalent in developing than the developed countries and the prevalence is directly proportional to the economic conditions in the country. Prevalence of H. pylori infection is declining rapidly in the developed countries like USA. But 30–40% of the population is still found to be infected. More number of non-whites and immigrants are infected compared to the whites. Humans are infected during infancy and childhood and mode of its transmission is from person to person.

The studies published recently show a high prevalence of H. pylori infection in Asia. It is ranging from 54 to 76 percent in different countries of the region. In Pakistan, the studies showing the prevalence of H. pylori are scanty but some earlier studies showed a sero-prevalence of 58–60%. Microbiologically, H. pylori are gram negative, spiral shaped, motile and flagellate bacilli. They reside underneath the gastric mucus membrane adjacent to the gastric epithelial cells. They measure from 3.5 to 0.5 μm and are non-spore forming. Initially the H. pylori infection was found to be associated with gastro-duodenal diseases. Later studies have shown its possible role in several other diseases, other than the gastrointestinal diseases. Some studies have reported its potential role in the occurrence of cardiovascular diseases. The Cag A-positive strains of H. pylori were shown to be implicated.

This study was carried out to find out the prevalence of H. pylori infection in our population and to demonstrate any association between H. pylori infection and the myocardial infarction.

SUBJECTS AND METHODS

This study was carried out in the Department of Microbiology, Nishtar Medical College, Multan in collaboration with the Ch. Pervaiz Elahi Institute of Cardiology, Multan. Permission was obtained from the Institutional Research Ethics Committee. A total of 200 subjects were included in this study. They were divided into two groups. Group A (n=150) consisted of admitted patients of myocardial infarction after the first-time myocardial infarction. Group B (n=50) were apparently healthy adults. Mean age of the subjects in the two groups was non-significantly different and ranged between 40 and 65 years. About 10 ml of venous blood was drawn in a syringe, left to clot, and serum was separated by centrifugation. H. pylori antibodies were estimated using ELISA. Results: In group A, 68.7%, and in group B 44% patients showed IgG antibodies for H. pylori. The comparison of the percentages of H. pylori positive cases in group A and group B was statistically significant. In our study, 44% of apparently normal, healthy population was shown to have antibodies to H. pylori.

Conclusion: A significantly increased percentage of subjects suffering from myocardial infarction showed H. pylori antibodies in their sera compared to apparently normal, healthy subjects.

Keywords: Myocardial infarction, Helicobacter pylori, sero-prevalence
RESULTS
Table-1 shows the gender-wise distribution of subjects in the two groups. Group A consisted of 121 males and 29 females. Group B had 38 males and 12 females. Mean age of the subjects in group A was 52.42 years and mean age of subjects in group B was 51.96 years. The comparison of age of the subjects in the two groups was statistically non-significant ($p$>0.05).

Table-2 shows the percentage of H. pylori positive cases in the two groups. In group A, 68.7% showed IgG antibodies for H. pylori. In group B, 44% showed IgG antibodies for H. pylori. The comparison of the percentages of H. pylori positive cases in group A and group B was statistically significant ($p$<0.05).

**Table-1: Gender-wise distribution of subjects**

<table>
<thead>
<tr>
<th>Group</th>
<th>Males (n=159)</th>
<th>Females (n=41)</th>
<th>Mean Age (Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>121</td>
<td>29</td>
<td>52.42</td>
</tr>
<tr>
<td>Group B</td>
<td>38</td>
<td>12</td>
<td>51.96</td>
</tr>
</tbody>
</table>

Differences between the two groups were non-significant ($p$>0.05)

**Table-2: Helicobacter pylori positive cases (%)**

<table>
<thead>
<tr>
<th>Group</th>
<th>Positive</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>68.7</td>
<td>69.4</td>
<td>65.5</td>
</tr>
<tr>
<td>Group B</td>
<td>44%</td>
<td>42.1</td>
<td>50.0</td>
</tr>
</tbody>
</table>

*Differences between the two groups were significant ($p$<0.05)*

DISCUSSION
H. pylori usually cause a lifelong infection of the gastric mucosa. In addition, H. pylori infections have been shown to be related to coronary heart disease because of some systemic effects. H. pylori infection and coronary heart disease are also common conditions of the late middle and old age. H. pylori are a major cause of gastric ulcer disease. Its co-morbidity with coronary heart disease is found to be more frequent than expected. 17

In our study, 44% of apparently normal, healthy population was shown to have antibodies to H. pylori. This was less than the previously reported 58–60% H. pylori infection in our population. 18 Decreased percentage found in our study may be due to the increased awareness about this infection in relation to the gastric conditions and because of the greater use of antibiotics in gastric conditions.

CONCLUSION
There is a significantly increased percentage of subjects suffering from myocardial infarction having H. pylori antibodies in their sera compared with apparently normal, healthy subjects. This finding points towards the possible association of H. pylori infection with myocardial infarction. Further studies are needed to show any causal relationship between H. pylori infection and the myocardial infarction.

REFERENCES

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