Helicobacter Pylori as a Risk Factor for Post Infectious Irritable Bowel Syndrome

Essamaddin Ahmed Abdelhamid Ibrahim

Department of Medicine, University of Science and Technology, Sudan

ABSTRACT

Backgrounds: Helicobacter Pylori is a common pathogen leading cause of peptic ulcer disease. Several studies linked Helicobacter Pylori infection and the development of irritable bowel syndrome.

Aims: We investigated the effectiveness of standard triple therapy and the association between H. Pylori infection and the development of post infectious irritable bowel syndrome.

Materials and methods: Prospective analytical study was conducted and we appointed 200 H. Pylori positive patients, they consented and subjected to structured questionnaire and received standard triple therapy (14 days course of proton pump inhibitor (PPI), clarithromycin and either amoxicillin or metronidazole). After three months all patients re-evaluated regarding their symptoms and tested for eradication. Additionally we evaluated the association between H. Pylori infection and irritable bowel syndrome.

Results: 200 H. Pylori infected patients were participated in this study (57.5%) were females and (42.5%) were males. The mean haemoglobin level was initially 13.89g/dl and the mean platelet level was found to be 289 pre consumption of treatment with statistically insignificant increase haemoglobin and platelets levels post successful eradication (P<0.05). All H. Pylori positive patients followed up after three months and tested for eradication, the majority of the patients – 170 (85%) - successfully eradicate the bacteria. Twenty five patients (12.5%) failed to eradicate the bacteria and five patients failed to follow. Among the cured group 143 patients (71.5%; p<0.05) – appeared to have irritable bowel syndrome according to Rome criteria and considered as post infectious irritable bowel syndrome which was statistically significant.

Conclusions: in spite of high prevalence of antibiotics resistance in our country standard triple therapy proved to be effective in H. Pylori eradication. H. Pylori infection was significantly associated with irritable bowel syndrome.
previous history of H. Pylori infection, recent contact with H. Pylori positive patient and their complete blood count (CBC). Infected patients treated with a 14 days course of proton pump inhibitor (PPI), clarithromycin and either amoxicillin or metronidazole.

All H. Pylori positive patients followed up after three months and tested for eradication. Complete blood count was rechecked and mean haemoglobin was measured and compared with the previous mean haemoglobin three month before eradication of the bacteria. Additionally mean platelet level was measured before and three months after eradication of the bacteria and compared with each other.

Also those patients’ symptoms reevaluated to inquire about symptoms suggestive of irritable bowel syndrome (IBS). Patients considered to have IBS by using Rome criteria.

The data was analyzed by using IBM SPSS statistics, P value of less than 0.05 was considered to be statistically significant.

Results

A total number of 200 H. Pylori positive patients 37.5% of them in the age group between 30 to 39 years was enrolled in this study, of which 115 patients (57.5%) were females and 85 patients (42.5%) were males

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
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<tbody>
<tr>
<td>18-29 Years</td>
<td>44</td>
<td>22</td>
</tr>
<tr>
<td>30-39 Years</td>
<td>75</td>
<td>37.5</td>
</tr>
<tr>
<td>40-49 Years</td>
<td>31</td>
<td>15.5</td>
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<tr>
<td>50-59 Years</td>
<td>27</td>
<td>13.5</td>
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<tr>
<td>60 Years OR More</td>
<td>23</td>
<td>11.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>85</td>
<td>42.5</td>
</tr>
<tr>
<td>Female</td>
<td>115</td>
<td>57.5</td>
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</table>

Dyspepsia was noted as the leading presenting complain in the majority of the patients 164(82%), followed by nausea 136(68%), and only 40 patients develop vomiting (20%)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Frequency</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Nausea</td>
<td>136</td>
<td>68%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>40</td>
<td>20%</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>164</td>
<td>82%</td>
</tr>
<tr>
<td>Heartburn</td>
<td>90</td>
<td>45%</td>
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It was noticed that patients mean haemoglobin level was initially 13.89g/dl and this level had very slight improvement 3 months after treatment , which reports its statistical insignificance (P value >0.05)

As well mean platelet level was found to be 289 with minor degree of increase after eradication of the bacteria (P value >0.05) Based on UBT, the majority of the patients – 170 (85%) - successfully eradicate the bacteria. Twenty five patients (12.5%) failed to eradicate the bacteria and five patients missed.

Among the cured group the preponderance of the patients had persistence symptoms in spite of H. Pylori eradication and after applying Rome criteria - 143 patients (71.5%; p<0.05) – appeared to have IBS and considered as post infectious IBS which was statistically significant.

No demographic variable played major role to develop post infectious IBS after H. Pylori infection was found.

Discussion

H. Pylori infection is a major health problem throughout the world with prominent both incidence and prevalence in developing countries [15]. There is no available data for H. Pylori prevalence among Sudanese patients but pointers suggest that H. Pylori is endemic in some areas in Khartoum. Generally, the prevalence of infection decrease in the older age group but this study denote that difference among various age groups was statistically insignificant, others have announced the same results [16,17]. The role of gender as a risk factor for H. Pylori infection is still debated, but this study showed female gender predominance. Certain factors may play role in female predominance such as plurality of population are female and the fact that the general demeanor in our country that males tend to sought medical advice less than females specially for minor complains Several studies link the association between H. Pylori infection and iron deficiency anaemia even in the absence of peptic ulcer disease and atrophic gastritis and even H. Pylori eradication can improve haemoglobin and ferritin level, contrary this study showed that H. Pylori infected patients have normal hemoglobin level and treatment did not exhibit significant improvement[18,19].

Although several studies showed platelet recovery after H. Pylori eradication in idiopathic thrombocytopenic purpura (ITP) , this study showed that platelet measures is not affected by H. Pylori infection and treatment didn’t increase platelet level [20].

Although the high prevalence of antibiotic resistance and our country, standard triple therapy proved to be effective in H. Pylori eradication but less effective than bismuth quadruple therapy Patient noncompliance to the treatment regime-most probably due to intolerable side effect of treatment - was the leading cause of treatment failure among the thirty patients who test In spite the fact that Irritable bowel syndrome is a common condition with worldwide distribution that affect all age groups, the pathophysiology of this functional disorder is poorly understood[21]. Many recent studies link between gastrointestinal infections and development of IBS. Several pathogens had been linked to post infectious IBS and post infectious functional dyspepsia, of those Campylobacter, Salmonella, and Shigella [22]. This study showed strong relation between H. Pylori infection and the development of IBS and functional dyspepsia, although upper gastrointestinal endoscopy was done only to a minority of the patients who had persistent symptoms after eradication.

Competing Interests

There is no potential conflict of interests that is relevant to this study.

References


