Helicobacter Pylori IgG Antibodies in Iraqi Uremic Patients

Hayffa Salman Al- Hadithi*, Sabah, Zyara Kadhum Al- Maliki*
And Omer, Salim Katubah**

* Department of microbiology, College of medicine, University of Baghdad.
** Department of surgery, College of medicine, University of Baghdad

Abstract:

Helicobacter pylori is a curved, S-shape Gram negative rod. It is non-sporulating, actively motile with cork screw motion. It has a bundle of (4-6) unipolar sheathed flagella, this sheath thought to protect bacteria against acidity.

Our result predicted increase in infection with H.pylori after operation in positive patient for infection while reverse pattern were observed in negative patients for infection. Significant increase of anti H.pylori IgG level percentage in chronic renal patients before, after, and control groups.

The developments of high level of IgG could be attributed to the treatment that provide suitable factor for developing infections. The other aspect of gastrointestinal disorders in uremia is mucosal lesions such as esophagitis, gastritis, duodenitis and peptic ulcer.

The aim of this research was evaluation of H.pylori IgG antibodies in Iraqi chronic renal failure before and after kidney transplantation. We concluded that High level of H.pylori IgG was estimated in patients with chronic renal failure and treatments of infection required before transplantation.

Key word: H. pylori, chronic renal failure, kidney transplantation

Introduction:

Helicobacter pylori (H.pylori) is a spiral Gram negative, flagellated, microaerophilic organism [1]. These spiral bacteria were originally observed in human gastric tissue many years ago the organism was first named as Campylobacter pyloridis because many spiral Gram negative bacteria isolated from the mammalian gastrointestinal tract were grouped under this genus [2]. But, then it became apparent that the new gastric pathogen did not fit into the genus Campylobacter because of the ultrastructural differences from Campylobacter, such as the presence of sheathed flagella and partial sequencing of 16s rRNA genes in Helicobacter [3]. In 1989 Goodwin announce his publication of new genus of Helicobacter at the 2nd meeting of the European, Campylobacter pylori study group in Germany [4]. Helicobacter pylori infection has a world wide distribution, it colonize more than half of the worlds population and it is the main cause of gastritis, peptic ulceration gastric adenocarcinoma and gastric lymphoma [5]. Many workers reported that more frequent
infection with patients with end stage of renal disease this could be associated with hormonal changes\(^6\).

The aim of this work was to show the effect of surgery on the occurrence of peptic ulcer in association with H. pylori infection.

Materials and Methods:

Thirty five patients with chronic renal failure attending the wards of kidney transplantation center in AL- SHAHID AL- HARRIRY Hospital and ready for kidney transplantation. Divided as (26) males and (9) females with an age range from (10-65) years. Thirty five healthy individuals representing the control group, composed of (22) males and (13) females with an age range from (13-50) years.

Chemical reagents:

All chemicals and reagents used in this study for analytical purposes were with high purity. The kit used in this work were provided by Bio hit Oyi company for Enzyme link immune sorbent assay analysis (Finland). The ELISA device used in this research were provided by Human company, with reader and washer united–USA.

Method of detection H. pylori IgG antibodies:

The H.pylori IgG antibodies is detected by ELISA with partial purified H. pylori bacterial antigen adsorbed on micro plate and detection antibody labeled with horseradish peroxidase (HRP)\(^7\).

Result:

Table-1: Distribution of anti H.pylori IgG positive individuals among study groups.

<table>
<thead>
<tr>
<th>Anti H.pylori IgG</th>
<th>Chronic renal failure patients No. (%)</th>
<th>Control percentage No. (%)</th>
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<tbody>
<tr>
<td></td>
<td>Pre operation</td>
<td>Post operation</td>
</tr>
<tr>
<td>Positive</td>
<td>(21) 60%</td>
<td>(26) 74.28%</td>
</tr>
<tr>
<td>Negative</td>
<td>(14) 40%</td>
<td>(9) 25.72%</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Figure-1: The percentage of anti H.pylori IgG level in CRF patients before kidney transplantation. (p <0.05) Where white series 1 represent the positive patients while the black represent the negative percentage.
Figure-2: The percentage of anti *H.pylori* IgG level in CRF patients post-operation. (p<0.05) Where white series 1 represent the positive patients while the black represent the negative percentage.

Figure-3: The percentage of anti *H.pylori* IgG level in control groups. Where: white series 1 represent the positive patients while the black represent the negative percentage.

Figure-4: The changes of anti *H.pylori* IgG in pre, post and control subject with *H. pylori* infection. (p<0.05)

Figure-5: The changes of *H.pylori* IgG in pre, post and control subjects without *H.pylori* infection. (p<0.05)
Figure-6: The changes in anti H.pylori IgG values before and after operation. Where series one represent anti H.pylori IgG before kidney transplantation Series two represents anti H.pylori IgG after kidney transplantation.

Discussion:

*H. pylori* is an important problem for public health as it can cause several diseases. The collected result predicted the wide distribution of the *H. pylori* infection among all groups even for control group. This result also reported by many works as *H. pylori* is the most common chronic infection in human beings.[8]

Gastrointestinal mucosa is characterized with rapid epithelial cell turnover and homeostasis that is mainly provided by apoptosis.[9] Therefore, it can be considered that the impaired apoptosis may have a role in the pathogenesis of many gastrointestinal system diseases. However, clear discrepancy between the numbers infected individuals and patients with renal failure. The *H. pylori* infections were ranged between (21-64%) in uremic patients. These observations were also reported by other clinical literature.[10]

The result report significant increase in the level of anti *H.pylori* IgG after kidney transplantation even in those with values below the cutoff. The developments of high level could be attributed to the treatment that provide suitable factor for developing infections. The other aspect of GI disorders in uremia is mucosal lesions such as esophagitis, gastritis, duodenitis and peptic ulcer such results have been reported by many other scientist.[11, 13]

References:


