

Helicobacter Pylori IgG Antibodies in Iraqi Uremic Patients

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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

الخلاصة:

البكتريا اللولبية المعوية ذات شكل منحنى اوتأخذ شكل حرف اس باللغة الانكليزية سالبة لصبغة كرام لاتكون ابواغ ذات حركة نشطة تشبه في حركتها حركة المسمار اللولبي لها حزمة من السواط المغلفة الموجودة في احد اقطابها والفائدة من وجود الغلاف على السوط هو لحماية البكتريا من الظروف المحيطة (الحموضة).
اظهرت النتائج زيادة في الاصابة بالبكتريا اللولبية المعوية بعد اجراء عملية زرع الكلى في الاشخاص المصابين بالبكتريا بينما اظهرت نمط معاكس في الاشخاص السالبيين للاصابة كما ولوحظ ان هنالك زيادة معنوية في الاجسام المضادة نوع كاما في الاشخاص الصابيين بعجز كلوي مزمن قبل وبعد العملية وكذلك للمجموعة الطابطة تطور مستوى عالي من الاجسام المضادة نوع كاما قد يعزى الى العلاج الذي ياخذ المريض بعد عملية زرع الكلى (مثبطات المناعة).
والذي يوفر عامل مناسب لتطور الاصابة بالبكتريا ولعل العامل الخر هو الاضطراب المعدي المعوي الحاصل في الاشخاص الذين يعانون من ارتفاع نسبة اليوريا في الجسم.

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 ultra-

structural 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.

<i>Anti H.pylori</i> IgG	Chronic renal failure patients No. (%)		Control percentage No. (%)
	Pre operation	Post operation	
Positive	(21)60%	(26)74.28%	(22)62.85%
Negative	(14)40%	(9)25.72%	(13)38.15%
Sig.	0.001	0.001	

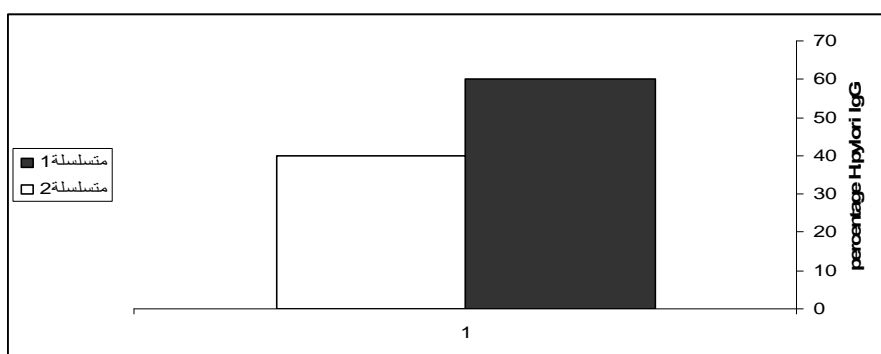


Figure-1: The percentage of anti *H.pylori* IgG level in CRF patients before kidney transplantation.

(p <0.05) Where white series 1 represent the positive patients while the black represent the negative percentage.

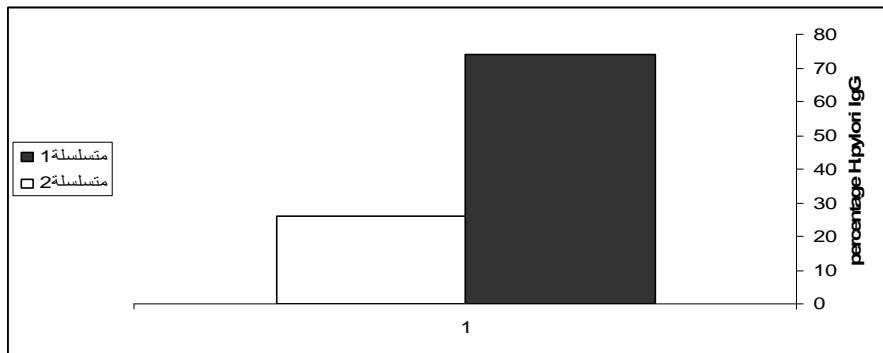


Figure-2: The percentage of anti *H.pylori* IgG level in CRF patients post-operation. ($p<0.05$) Where white series 1 represent the positive patients while the black represent the negative percentage.

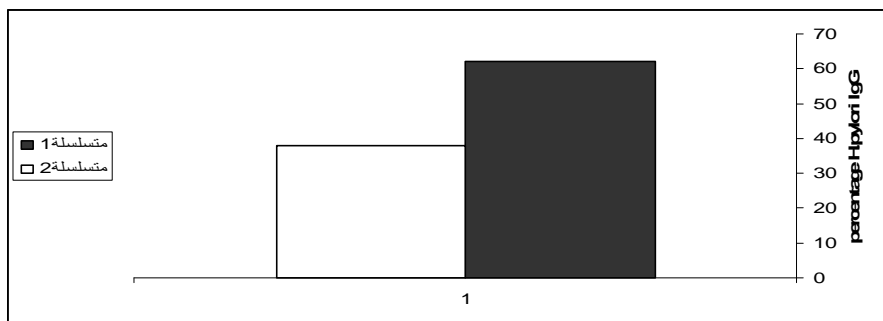


Figure-3: The percentage of anti *H.pylori* IgG level in control groups. Where: white series 1 represent the positive patients while the black represent the negative percentage

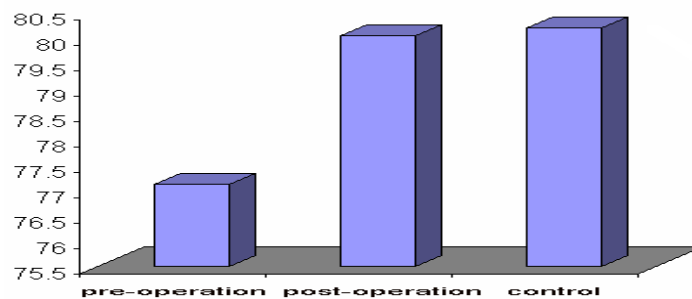


Figure-4: The changes of anti *H.pylori* IgG in pre, post and control subject with *H. pylori* infection. ($p<0.05$)

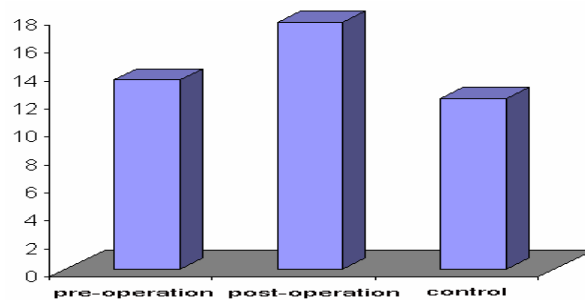


Figure-5: The changes of *H.pylori* IgG in pre, post and control subjects without *H.pylori* infection. ($p<0.05$)

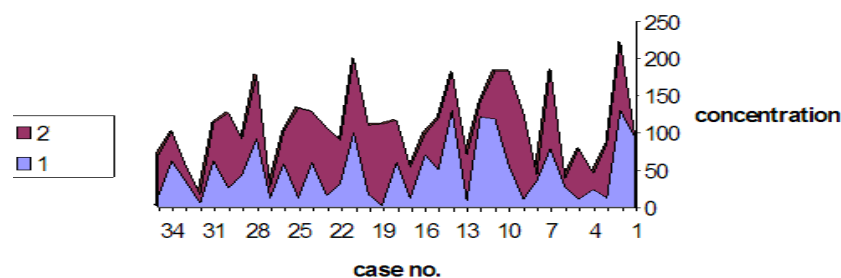


Figure-6: The changes in anti *H.pylori* IgG values before and after operation.

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].

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