THE PREVALENCE OF HELICOBACTER PYLORI INFECTION IN PATIENTS WHO HAVE ADDRESSED TO THE CENTER FOR FAMILY HEALTH – ORADEA

Negrean Rodica*, Toth Emeric, Pop Patricia**, Şandor Mircea***

*University of Oradea, Faculty of Medicine, Oradea
rodicanegrean@yahoo.com
** Center for Family Health, Episcop Pavel Street,No.12,Oradea

Abstract

The aim of this study was to evaluate the prevalence of Helicobacter pylori infection in a group of patients who have addressed to the Center for Family Health-Oradea. This study population consisted of 105 patients wich were screened to identify Helicobacter pylori presence.
Antibodies were found in 14 individuals (13.33%).The prevalence of Helicobacter pylori infection, was 71.42% females, and males 28,58% . 75% of positive tests were found in the age group 45 - 60 years.

Key words: Helicobacter pylori,infeciton, prevalence, antibody

INTRODUCTION

Helicobacter pylori is a Gram-negative, microaerophilic bacterium that can inhabit various areas of the stomach, particularly the antrum. It causes a chronic low-level inflammation of the stomach lining and is strongly linked to the development of duodenal and gastric ulcers and stomach cancer. Over 80% of individuals infected with the bacterium are asymptomatic.The bacterium was initially named *Campylobacter pyloridis*, then renamed *Campylobacter pylori* (pylori = genitive of pylorus) to correct a Latin grammar error. When 16S rRNA gene sequencing and other research showed in 1989 that the bacterium did not belong in the genus *Campylobacter*, it was placed in its own genus, *Helicobacter*. The genus derived from the ancient Greek *hĕlix*/ἕλιξ "spiral" or "coil". The specific epithet *pylōri* means "of the pylorus" or pyloric valve (the circular opening leading from the stomach into the duodenum), from the Ancient Greek word *πυλωρός*, which means gatekeeper (O'Connor et al., 1992).

More than 50% of the world's population harbor *Helicobacter pylori* in their upper gastrointestinal tract. Infection is more prevalent in developing countries, and incidence is decreasing in Western countries. *Helicobacter pylori*'s helix shape (from which the generic name is derived) is thought to have evolved to penetrate the mucoid lining of the stomach (Yoshio, 2008; Brown, 2000).

Helicobacter pylori is a major cause of diseases of the upper gastrointestinal tract. Eradication of the infection in individuals will improve symptoms including dyspepsia, gastritis and peptic ulcers, and may prevent gastric cancer. Rising antibiotic resistance increases the need for a prevention strategy for the bacteria. There have been extensive vaccine studies in mouse models, which have shown promising results (McGuigan, 1988). Researchers are studying different adjuvants, antigens, and routes of immunization to ascertain the most appropriate system of immune protection, with most of the research only recently moving from animal to human trials (Selgrad and Malfertheiner, 2008; Hoffelner et al., 2008; Kabir, 2007).

In patients who present clinical symptoms relating to the gastrointestinal tract there are two major methods of investigation: invasive and noninvasive. Invasive methods include culture of gastric biopsy samples, histologic examination of stained biopsy specimens, or direct detection of the urease activity in the biopsy (CLO test). These methods need to obtain a biopsy sample by endoscopy, which is expensive, and usually results discomfort and risk to the patient (Cover and Blaser ,1995). Noninvasive techniques include urea breath tests and serological methods. Urea breath test requires the use of a small amount of radioactivity and a mass spectrometer. Serologic tests are employed to detect antibodies as human immune response to *Helicobacter pylori*. Two methods appear to be of great interest regarding their use in *Helicobacter pylori* routine serology, namely the ELISA and the Western immunoblot because they offer the most versatility in regards to immunoglobulin specificity and relative ease of use (Kist,1991; Podolsky et al.,1989;Yamaoka and Yoshio,2008).

MATERIAL AND METHODS

For detects IgG antibodies were used following materials:

- test devices, each sealed in a pouch with a dropper pipette;
- 1 bottle of wash buffer- as a preservative;
- Whole blood or serum of every patients;

To collect serum or whole blood specimens were followed standard laboratory procedures.

Before testing refrigerated specimens and other test materials, including devices, were equilibrated to room temperature and than one drop of fresh blood or serum to the sample was added to the reaction box. After the specimen was totally absorbed three drops of buffer were added.

Interpretation of results was made as follows:

Positive results:

If both the C line and T line appeared, the result indicated that the IgG antibodies specific to *Helicobacter pylori* was detected and the result was positive (Figure 1).

Negativ results:

If only the C line appeared in the control region, the test indicated that no antibodies to *Helicobacter pylori* was detected and the result was negative (Figure 2).

Invalid results:

When no control line appeared within the reaction time, the test was repeated with a new test device (Figure 3).

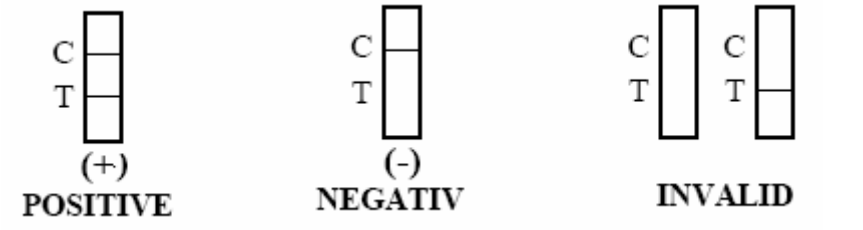

Fig.1.Positive result Fig.2.Negativ result Fig.3.Invalid result

Quality control was ensured by control serum.

RESULTS AND DISCUSSION

In this study we evaluate the prevalence of *Helicobacter pylori* infection in a group of patients who have addressed to the Center for Family Health - Oradea. This study population consisted of 105 patients wich were screened to identify *Helicobacter pylori* presence (Figure 4).

Antibodies were found in 14 individuals (13.33%).The prevalence of *Helicobacter pylori* infection , was 71.42% females and males 28,58% (Figure 5). 75% of positive tests were found in the age group 45 - 60 years.

Helicobacter pylori infections occur in human populations throughout the world, but the prevalence of infection in the population varies with age, standards of hygiene, geographical regions, and probably socioeconomic status. In most developed countries, about 50% of the

population may have *Helicobacter pylori* infection by the age of 60 years, while only 10-20% of adults in the third decade of life have it (Kist, 1991).

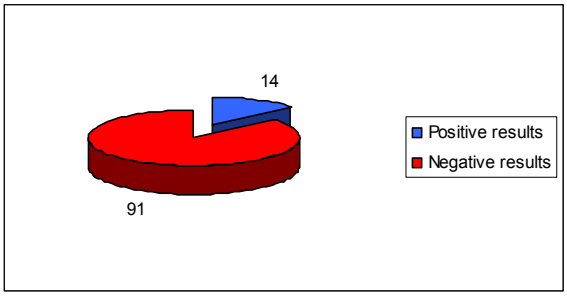

Fig.4.The prelevance of Helicobacter pylori.

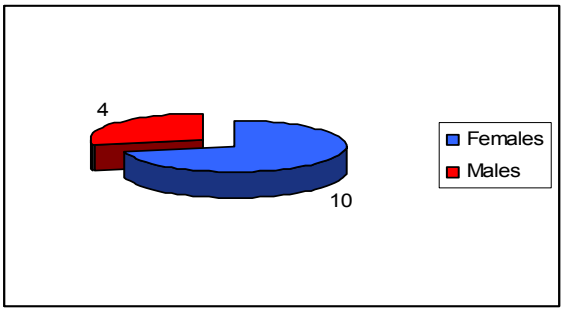

Fig.5.Positive results.

CONCLUSIONS

1. The prelevance of *Helicobacter pylori* infection in the studied population was 13.33%.
2. Higher prevalence of *Helicobacter pylori* in females.
3. Rapid test which detects IgG antibodies specific to *Helicobacter pylori* infection in patient's blood or serum it's a noninvasive method and does not use radioactive isotopes; the assay procedures are easy and do not require professional training; it provides a rapid result. It is a useful on-site aid in the diagnosis of *Helicobacter pylori* infection.

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