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ORIGINAL ARTICLE

Prevalence of Helicobacter pylori in Children

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ABSTRACT:

Background: The study was conducted to assess the prevalence of helicobacter pylori in children in a known population.**Material and methods**: A total of one hundred children were checked for gastrointestinal problems. Individuals under the age of one year, those above the age of fifteen, those with chronic illnesses of any kind, and those taking gastrointestinal-related medications were not included in the study. Questions concerning gastrointestinal symptoms and complaints, such as persistent stomach discomfort, nausea, vomiting, gastroesophageal reflux, and dyspeptic complaints, were asked of all the children. Patients were considered to be positive for H. pylori infection if they had both positive serology results and positive stool antigen test results.**Results**: This study comprised of 50 male subjects as well as 50 female subjects. H. pylori infection was present in 9 subjects out of 100 subjects. It was observed that out of 9 subjects having H. pylori infection, 6 subjects reported with recurrent abdominal pain, 2 subjects presented with nausea and vomiting and 1 subject presented with haematemesis.**Conclusion**: 9 out of 100 subjects had H. pylori infection. The most common clinical feature was recurrent abdominal pain.

Keywords: H. pylori, bacteria, children, abdominal pain, haematemesis

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INTRODUCTION

Helicobacter pylori is a spiral gram-negative microorganism that is distributed worldwide. It is estimated that over 50% of the world population are infected with H. pylori.[1-3] H. pylori–associated infection is either usually clinically silent or its signs and symptoms are non-specific. Gastroesophageal reflux, esophagitis, delayed gastric emptying, and various motilitiy disorders can be a sign or symptom of it.[4,5] However, these symptoms are seen in many childhood illnesses. Younger children with peptic complaints may not have symptoms as clear as those of older children, and diagnosis of infection due to H. pylori is more difficult.[6-8]

The epidemiology of H. pylori-associated infection is variable, since the prevalence is significantly higher and infection occurs in earlier ages in developing or poor countries compared to developed countries.[9-11]

MATERIAL AND METHODS

A total of one hundred children were checked for gastrointestinal problems. Individuals under the age of one year, those above the age of fifteen, those with chronic illnesses of any kind, and those taking gastrointestinal-related medications were not included in the study. Questions concerning gastrointestinal symptoms and complaints, such as persistent stomach discomfort, nausea, vomiting, gastroesophageal reflux, and dyspeptic complaints, were asked of all the children. Patients were considered to be positive for H. pylori infection if they had both positive serology results and positive stool antigen test results. All children had stool samples and blood sera examined. All children had their venous blood drawn in three milliliters, and the sera were kept in a deep freezer at -20°C.

RESULTS

Table 1: Gender-wise distribution of subjects.

Gender	Number of subjects	Percentage
Males	50	50%
Females	50	50%
Total	100	100%

There were 50 males and 50 females in this study.

Table 2: Prevalence of Helicobacter pylori infection in children

Prevalence	Number of subjects	Percentage
Absent	91	91%
Present	09	09%
Total	100	100%

H. pylori infection was present in 9 subjects out of 100 subjects.It was observed that out of 9 subjects having H. pylori infection, 6 subjects reported with recurrent abdominal pain, 2 subjects presented with nausea and vomiting and 1 subject presented with haematemesis.

DISCUSSION

In 1983, Robin Warren, a pathologist in Perth, reported the presence of “curved bacterium” in the mucosal layer of the gastric biopsy specimen. Together with Barry Marshall, he subsequently isolated the organism from the gastric biopsy specimens and named it Campylobacter pyloridis (C. pylori),[12] which was ultimately named as Helicobacter pylori (H. pylori). Marshall and Warren also noted

that C. pylori (H. pylori) infection was associated with gastric and duodenal ulceration.[13] In recognition with this imperative discovery, they were awarded the Nobel Prize for Medicine in 2005.

Their discovery initiated a new interest in previously neglected field of gastric microbiology. In 1994, the National Institute of Health consensus conference in USA declared an association between H. pylori and peptic ulcer disease.[14] During the same year, H. pylori was identified as a carcinogen associated with gastric adenocarcinoma[15] and gastric non-Hodgkin lymphoma.[16] An association between H. pylori and gastric mucosa-associated lymphoid tissue lymphoma (MALToma) was identified in 1991.[17]

This study was conducted to assess the prevalence of Helicobacter pylori in children.

This study comprised of 50 male subjects as well as 50 female subjects. H. pylori infection was present in 9 subjects out of 100 subjects. It was observed that out of 9 subjects having H. pylori infection, 6 subjects reported with recurrent abdominal pain, 2 subjects presented with nausea and vomiting and 1 subject presented with haematemesis.Singh M et al (2006)[18] determined prospectively the prevalence of H. pylori infection in children and its association with gastroduodenal disease. They evaluated 240 children undergoing upper gastrointestinal endoscopy for H. pylori infection by rapid urease test, culture, ureA PCR and histopathology. Group I constituted 58 children with upper abdominal pain (UAP) and group II (controls) of 182 children without UAP who underwent diagnostic or therapeutic endoscopy for other reasons. Helicobacter pylori-positive children with UAP received anti-H. pylori therapy. Helicobacter pylori infection was significantly higher in children with UAP than controls (53.4% vs. 28%; P<0.001) and overall prevalence increased with age. On follow-up endoscopy, H. pylori had been eradicated from 82% of children with UAP; it was eradicated from the remaining 18% after a second regimen. Treated H. pylori-positive children with UAP remained symptom-free for a median of 25 months. Control children remained chronically H. pylori infected. Chronic inflammation was present in all infected children, and active inflammation in 48.8%. The study shows H. pylori infection increases with age and is strongly linked to UAP in children.Ceylan A et al (2007)[19] in their study determined the prevalence of Helicobacter pylori among children and their family members and to evaluate some epidemiologic characteristics. The study included 275 children, aged 1-15 year(s), suffering from different gastrointestinal complaints. Blood serology and stool antigen testing were used for the diagnosis of infection due to H. pylori. Sixty-five (23.6%) of the 275 children were positive for H. pylori, and this positivity had a significantly increasing correlation with age (p<0.001). H. pylori-associated infection was observed among 45 (69.2%) and 17 (8%) mothers in the H. pylori-infected and non-infected groups respectively (p<0.0001). Most children and their families infected with H. pylori were living in an urban area. The findings suggest that infection due to H. pylori is a problem for this district area, and all children having any gastrointestinal complaints should be examined whether H. pylori was prevalent among their family members.

CONCLUSION

9 out of 100 subjects had H. pylori infection. The most common clinical feature was recurrent abdominal pain.

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