

ASSOCIATION OF HELICOBACTER PYLORI INFECTION WITH RECURRENT ABDOMINAL PAIN

DR. SHUMAILA RASHEED,
MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

DR. IRFANA ALI,
MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

DR. MARIA JABEEN,
MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

Abstract;

Background; Recurrent abdominal pain has significant impact on the quality of life of the children in terms of education, physical activity and sports. This study was done to ascertain the frequency of *H. pylori* in children presenting with recurrent abdominal pain in our local population. **Objective;** To determine the frequency of *H. Pylori* infection in children with recurrent abdominal pain. **Material and Methods;** This descriptive, cross-sectional study was done at Department of Pediatric Medicine, Nishtar Hospital Multan. Total duration of the study was 12 months from 01-11-2016 to 01-11-2017. A total of 148 children with recurrent abdominal pain were recruited in our study using non – probability consecutive sampling technique. All data was entered and analyzed by using SPSS version 18. **Results;** Of these 148 study cases, 83 (56.1 %) were boys while 65 (43.9%) were girls. Mean age of our study cases was 7.60 ± 1.85 years. Mean height of our study cases was 84.53 ± 16.32 centimeters, mean weight of our study cases was 22.34 ± 4.67 kilograms and mean hemoglobin level was 12.27 ± 0.98 g/dl. Of these 148 study cases, 77 (52%) were from rural areas, 103 (69.6 %) were from poor families, 38 (25.7%) reported their source of drinking water was Govt. supply and 110 (74.3%) reported hand pump as their source of drinking water. Mean duration of illness was noted to be 5.24 ± 2.05 months and 110 (74.3%) presented with disease duration within 6 months. Mean no. of episodes was 6.59 ± 2.13 and 109 (73.6 %) presented with more than 5 episodes. *Helicobacter pylori* was positive in 78 (52.7%) and was negative in 70 (47.3%) of our study cases. **Conclusion;** Frequency of *Helicobacter pylori* was very high in our study in patients with recurrent abdominal pain. *Helicobacter pylori* was significantly associated with male gender, increasing and poor socioeconomic status. All clinicians treating such patients should investigate for *Helicobacter pylori* infection for proper management of these patients which will improve their productivity in terms of education and sports.

Keywords; Recurrent abdominal pain, *H. pylori*, Frequency.

Introduction;

Helicobacter pylori (*H. pylori*) is the major causative organism of gastrointestinal diseases including chronic gastritis, peptic ulcer associated disorders, gastric and duodenal carcinomas leading to morbidity and mortality in humans. *H. pylori* is more prevalent among the elderly and more frequent in males than females^{1,2,3}. HP, is a gram-negative curved bacillus that colonizes gastric mucosa in humans. Epidemiological studies have demonstrated that the prevalence of HP infection increases with advancing age and is higher in developing countries and among population with low socioeconomic background, probably due to conditions that favour the acquisition of infection, such as poor hygiene, crowded living conditions, and absence or deficiency of sanitation^{4,5}. Recurrent abdominal pain is quite commonly seen in children⁶. Recurrent abdominal pain (RAP) is

defined as at least three episodes of pain in a three month period interfering with normal activity. This definition was derived from the seminal description by Apley and Nash in the late 1950's. The frequency of recurrent abdominal pain in children ranges between 10-20%.⁷ A study conducted by Hafeet et al⁸ reported 75% frequency of *H. pylori* infection in children having recurrent abdominal pain from Islamabad.

Material and Methods;

A total of 148 children of either sex (male and female) presenting aged 4 – 12 years were included in this study. Patients already taking antibiotics, bismuth and proton pump inhibitor were excluded from our study. All the patients who meet inclusion as well as exclusion criteria of this study were registered from Department of Pediatrics, Nishtar Hospital Multan. Detailed history and physical examination (to rule out organic causes of the recurrent abdominal pain) was conducted. Once registered in the study, all the relevant baseline investigations were done like Hb level. Venous blood sample (3ml) was drawn and sent to laboratory for this purpose in commercially available EDTA vial for Hb level testing. Fresh stool specimens were taken from each child with the help of parents into a plastic container. This sample was immediately sent to the Pathology laboratory of hospital for *H. pylori* stool antigen testing. All the data was entered and analyzed using SPSS-18.

Results;

Our study included a total 148 patients having recurrent abdominal pain meeting inclusion criteria of our study. Of these 148 study cases, 83 (56.1 %) were boys while 65 (43.9%) were girls. Mean age of our study cases was 7.60 ± 1.85 years (with minimum age was 5 years while maximum age was 12 years). Mean of the boys was 7.96 ± 1.97 years while that of girls was 7.14 ± 1.61 year ($p = 0.007$). Our study results have indicated that majority our patients i.e. 103 (69.6%) belonged to the age group of 4 – 8 years. Mean height of our study cases was 84.53 ± 16.32 centimeters, mean weight of our study cases was 22.34 ± 4.67 kilograms and mean hemoglobin level was 12.27 ± 0.98 g/dl. Of these 148 study cases, 77 (52%) were from rural areas, 103 (69.6 %) were from poor families, 38 (25.7%) reported their source of drinking water was Govt. supply and 110 (74.3%) reported hand pump as their source of drinking water. Mean duration of illness was noted to be 5.24 ± 2.05 months and 110 (74.3%) presented with disease duration within 6 months. Mean no. of episodes was 6.59 ± 2.13 and 109 (73.6 %) presented with more than 5 episodes. *Helicobacter pylori* was positive in 78 (52.7%) and was negative in 70 (47.3%) of our study cases.

Discussion;

After 20 years of isolating *H. pylori*, its association and cause of recurrent abdominal pain has been one of the most debated controversies in pediatric gastroenterology. Researchers across the globe who investigated this association have found contradicting results. In these researches, several methods were used to define positive *H. pylori* status, including serology, histology, bacterial cultures, rapid urease test and UBT. Some investigators used treatment trials to eradicate *H. pylori*. The heterogeneity of their definition of recurrent abdominal pain and the methodologies may have led to the controversies in the results and conclusions⁹⁻¹².

Our study included a total 148 patients having recurrent abdominal pain meeting inclusion criteria of our study. Of these 148 study cases, 83 (56.1 %) were boys while 65 (43.9%) were girls. Similar results have been reported by a study conducted by Younas et al¹³ from Peshawar reported male gender predominance with 61 % boys having recurrent abdominal pain which is similar to our study results. Zeyrek et al¹⁴ from Turkey has also reported male gender predominance with 53 % boys having recurrent abdominal pain. Another study conducted in Rawalpindi by Mahmud et al¹⁵ has reported male gender predominance with 58 % boys presenting with recurrent abdominal pain. However Alimohammadi et al¹⁶ from Iran has reported slightly higher female gender predominance.

Mean age of our study cases was 7.60 ± 1.85 years (with minimum age was 5 years while maximum age was 12 years). Mean of the boys was 7.96 ± 1.97 years while that of girls was 7.14 ± 1.61 year ($p = 0.007$).

Our study results have indicated that majority our patients i.e. 103 (69.6%) belonged to the age group of 4 – 8 years. Younas et al ¹³ from Rawalpindi has reported similar results with mean age of the children with recurrent pain was 86 ± 47 months which is in compliance with our study results. Zeyrek et al ¹⁴ from Turkey has also reported mean age was 9 ± 3 years which is close to our study results. Another study conducted in Rawalpindi by Mahmud et al ¹⁵ has reported 7.04 ± 2.85 years mean in children with recurrent with abdominal pain. Alimohammadi et al ¹⁶ from Iran has reported similar results.

Mean height of our study cases was 84.53 ± 16.32 centimeters, mean weight of our study cases was 22.34 ± 4.67 kilograms and mean hemoglobin level was 12.27 ± 0.98 g/dl.

Of these 148 study cases, 77 (52%) were from rural areas, 103 (69.6 %) were from poor families, 38 (25.7%) reported their source of drinking water was Govt. supply and 110 (74.3%) reported hand pump as their source of drinking water. Another study conducted in Rawalpindi by Mahmud et al ¹⁵ has reported 59 % children with recurrent abdominal pain belonged to poor families which is close to our study results. Alimohammadi et al ¹⁶ from Iran has reported recurrent abdominal pain being more common in children from poor families.

Mean duration of illness was noted to be 5.24 ± 2.05 months and 110 (74.3%) presented with disease duration within 6 months. Mean no. of episodes was 6.59 ± 2.13 and 109 (73.6 %) presented with more than 5 episodes. Our findings are comparable to that of Alimohammadi et al ¹⁶ from Iran.

Helicobacter pylori was positive in 78 (52.7%) and was negative in 70 (47.3%) of our study cases. Telmesani et al ¹⁷ from Saudi Arabia reported 73 % *H. pylori* infection in children with recurrent abdominal pain which is slightly higher than that reported in our study. Zeyrek et al ¹⁴ from Turkey has also reported 49 % *H. pylori* infection which is close to our study results. Another study conducted in Rawalpindi by Mahmud et al ¹⁵ has reported 38 % *H. pylori* infection which is close to our study results. Alimohammadi et al ¹⁶ from Iran has reported 58.3 % *H. pylori* in children with recurrent with abdominal pain. A study conducted by Nadeem et al ¹⁸ reported 62 % *H. pylori* infection which is close to our study results.

Conclusion;

Frequency of *Helicobacter pylori* was very high in our study in patients with recurrent abdominal pain. *Helicobacter pylori* was significantly associated with male gender, increasing and poor socioeconomic status. All clinicians treating such patients should investigate for *Helicobacter pylori* infection for proper management of these patients which will improve their productivity in terms of education and sports.

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