

Gastritis in Saudi Arab children

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ABSTRACT

Objective: Information on childhood gastritis in developing countries is rare; hence, the objective of this study is to report the pattern of this condition in Saudi Arab children.

Methods: Data analysis were carried out in all children <18 years of age who were referred for endoscopy at King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia from 1993 to 2002. Only children with histology-proven gastritis were included.

Results: One hundred and seventy-five patients out of 851, referred for the investigation of gastrointestinal symptoms, had histology-proven gastritis; whereas only 110/851 (13%) had endoscopic features of gastritis. Most of the children (96%) were Saudi nationals, the age ranged between 4 days to 18 years, and the male to female ratio was 0.4:1. The most common presentation of gastritis was abdominal pain in 42%, followed by combination of abdominal pain and vomiting in 20% and

vomiting alone in 18% of the children. Rare but important presentations included refractory anemia, melena and halitosis. The prevalence of gastritis increased with age from 9% in children <5 years of age to 42% in adolescents 16-18 years of age. Likewise, the prevalence of *Helicobacter pylori* (*H. pylori*) gastritis increased from 47% in children <5, to 62% in the 6-15 year age group, and 69% in the 16-18 years old adolescents. Endoscopy was normal in 74/175 (42%) of histologic gastritis and the prevalence of *H. pylori* gastritis was the highest in cases of endoscopic nodularity (92%).

Conclusion: Compared to findings from various parts of the world, this report document a similar clinical pattern, but high prevalence of *H. pylori* gastritis in Saudi Arab children.

Saudi Med J 2005; Vol. 26 (4): 576-579

Gastritis is a frequently entertained clinical diagnosis to explain various complaints such as vomiting, abdominal pain or dyspepsia in adults and children. However, it is well known that such diagnosis should be made only in the presence of histologic evidence of gastric inflammation.^{1,3} The relatively recent reports on the role of *Helicobacter pylori* (*H. pylori*) infection as a cause of gastritis has improved the management of patients (adults and children) with this condition.^{4,6} Although there have been reports on gastritis and *Helicobacter* infection in adults,⁷⁻⁹ a search of the literature did not reveal any publication on gastritis in Saudi Arab children. Therefore, we report our experience on the pattern of gastritis in children of this developing country.

Methods. Analysis of all cases of gastritis diagnosed was carried out in children <18 years of age at King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia over a period of 10 years. Only histology-proven cases were included in this analysis. Data retrieved from the records included age, gender, nationality, clinical presentation, endoscopy and histopathology reports. In this hospital, all abnormal histopathology specimens were examined routinely for the presence of *H. pylori* by either hematoxylin and eosin stain or modified Giemsa stain and the result is recorded in the histopathology report. The diagnosis of gastritis was based on the presence of chronic inflammatory cells with or without erosions. Descriptive statistics

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Received 5th September 2004. Accepted for publication in final form 4th December 2004.

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were used to define prevalence data, the clinical presentation, and the correlation of endoscopic findings with the presence of *H. pylori*.

Results. From 1993 to 2002, 175/851 (21%) children were referred to gastroenterology service for the investigation of upper gastrointestinal symptoms had histology-proven gastritis; whereas only 110/851 (13%) had endoscopic features of gastritis. Most of the children (96%) were Saudi nationals, the age range was between 4 days to 18 years, and the male to female ratio was 0.4:1. The clinical profile of gastritis is shown in **Table 1**, indicating that the most common presentation of gastritis was abdominal pain in 42%, followed by combination of abdominal pain and vomiting in 20% and vomiting alone in 18% of the children. Rare but important presentations included refractory anemia, melena and halitosis. The age-related prevalence of gastritis in relation to *H. pylori* status is depicted in **Table 2** which indicates increasing prevalence with advancing age from 9% in children <5 years of age to 42% in adolescents 16-18 years of age. However, the prevalence of *H. pylori* gastritis varied from 47% in children <5, increasing to 62% in the 6-15 year age group, and 69% in 16-18 years old adolescents. The endoscopic correlates of histology-proven gastritis are shown in **Table 3**, indicating that endoscopy was normal in 74/175 (42%) of histologic gastritis, 57% of which are *H. pylori* positive, and that the prevalence of *H. pylori* gastritis was the highest in cases of endoscopic nodularity (92%).

Discussion. Gastritis is a commonly entertained diagnosis in children presenting with a variety of symptoms referable to the upper gastrointestinal (GIT) such as vomiting, abdominal pain or dyspepsia. As a result, medication is prescribed empirically, by some physicians to some of these children without investigation to confirm the diagnosis. In addition, many endoscopists diagnose gastritis based on the presence of certain signs such as erythema, erosions, or granularity and nodularity. In this report, endoscopic features of gastritis were found in only 13% of the children indicating that gastritis is not a common cause of GIT symptoms and therefore, should not be diagnosed on clinical grounds or endoscopy alone. The clinical presentation of gastritis in our patients, most commonly abdominal pain and vomiting were non-specific and not different from patterns reported by others.¹⁰⁻¹² In addition, the documentation of rare presentations such as refractory anemia, melena heartburns, dyspepsia, and halitosis are important for clinicians. Such clinical pattern in our children is similar to descriptions from other countries.¹²⁻¹⁴ The prevalence of histology-proven chronic gastritis

Table 1 - Clinical profile of gastritis.

Clinical profile	n	(%)
Vomiting	31	(18)
Abdominal pain	73	(42)
Pain and vomiting	35	(20)
Others*	36	(20)
Total	175	(100)

*Malabsorption (diarrhea 5, short stature/failure to thrive 17, rickets 2, celiac diseases 3), melena 2, heartburn/dyspepsia 3, anemia 3 and halitosis 1

Table 2 - Age-related prevalence of *Helicobacter pylori* (*H.pylori*).

Age (years)	Gastritis n (%)	<i>H. pylori</i> n (%)
0-5	15 (9)	7 (47)
6-10	26 (15)	16 (62)
11-15	60 (34)	37 (62)
16-18	74 (42)	51 (69)
Total	175 (100)	111 (63)

Table 3 - Endoscopic correlates of histologic gastritis.

Histologic gastritis	All gastritis n (%)	<i>H. pylori</i> * n (%)
Normal	74 (43)	42 (57)
Erythema	51 (29)	34 (67)
Erosions	37 (21)	23 (62)
Nodularity	13 (7)	12 (92)
Total	175 (100)	111 (63)

**Helicobacter pylori* positive

among children referred for endoscopy varies from 16% reported from Hong Kong¹⁵ to 17.5% in Italy¹⁶ and 19% from the USA.¹⁷ In this study, the overall 21% prevalence of gastritis is only slightly higher than most reports, indicating that this condition is not a common cause of GIT complaints. It is of interest to note that the prevalence of gastritis is age related accounting for 9% in children <5 years to 42% in the 15-18 years age group. Histologic abnormalities were detected in 74/175 (42%) of endoscopically normal-appearing gastric mucosa, a reminder that the accuracy of endoscopic diagnosis of gastritis is limited. In addition, 42 out of these 74 cases (57%) were *H. pylori* positive and may require specific therapy. These findings support the recommendation that biopsy of the gastric mucosa should be performed in children presenting with upper GIT complaints even when the endoscopic appearance looks normal.^{1-3,18,19} *Helicobacter pylori* is a recognized cause of chronic active gastritis in both adults and children.^{4,6} Identification of *H. pylori* organisms in tissue samples obtained by endoscopy is considered the most reliable means of diagnosing *H. pylori* infections.²⁰ The prevalence of *H. pylori* gastritis varies among different populations. De Giacomo et al¹⁶ reported 12.1% prevalence from Italy, whereas a prevalence of 14.1% was reported from Australia²¹ and 13% from Toronto, Canada.¹² Higher prevalence rates of 31% were reported from Kuwait and Alabama, USA^{10,11} and even a higher prevalence of 67% was reported from Limeric, Ireland.¹² The overall prevalence of *H. pylori* in this study of 63% is higher than most reports including the one from a neighboring country,¹⁰ but comparable to the report from Ireland.

The influence of age on the prevalence of *H. pylori* gastritis has been reported by others. Snyder et al,¹⁷ reported a pattern of low prevalence in young American children increasing with age starting with 4% in children <4 years, 23% in children 5-9 years, 29% in 10-14 years and 67% in 15-20 years.¹⁷ In this report, the prevalence in our young children is higher, accounting for 47% in children <5 years of age, and increasing to 62% in 6-10 and 11-15 age groups. However, the prevalence of 69% in 16-18 year old age group, which approaches the prevalence reported for Saudi adults,^{8,9} is similar to the 67% prevalence reported by Snyder et al¹⁷ in American adolescents. The prevalence of *H. pylori* was the highest in cases of endoscopic nodular gastritis (92%), a finding that is similar to most reports which consider that the nodular pattern of gastritis is specific for *H. pylori* infection in children and adults.^{22,23}

It can be concluded that gastritis is not a common cause of upper GIT complaints. Therefore, the diagnosis and treatment of gastritis should not be made without endoscopy and histologic

confirmation.² There is a high percentage of *H. pylori* gastritis in endoscopically normal gastric mucosa suggesting the need for routine antral biopsy. There is a high prevalence of *H. pylori* gastritis in our community. Nodular antral gastritis is the most common endoscopic feature of *H. pylori* infection.

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