

Prevalence of Oesophago - Gastroduodenal Illnesses Among Dyspeptic Children in Al-Anbar Governorate

Abdulla Eltaif Jassim

Ass. Prof. Department of Medicine, College of Medicine. University of Anbar – IRAQ

Abstract:

Objective: To determine the prevalence of Oesophago-gastroduodenal diseases among dyspeptic children in Al-Anbar Governorate.

Patients and Methods: A cross-sectional study conducted at Gastroendoscopy Unit of Al-Ramadi Teaching Hospital from 1 May 2002 -30 August 2007, and included two hundred seventy dyspeptic children subjected to Oesophago-gastroduodenoscopy (OGD) after direct complete medical history and clinical examination was taken from each child or from his parents.

Results: According to OGD findings, a higher significant prevalence of negative endoscopic findings (normal dyspeptic children) (62.2%) than those with positive cases (37.8%) were detected ($p < 0.5$). Among those with positive endoscopic findings, duodenal ulcer was detected in 67.6% followed in order by gastritis in 11.4%, gastric ulcer in 9.5%, and oesophagitis in 6.7% and duodenitis in 4.8%. The frequency distribution of positive endoscopic findings was slightly higher among male dyspeptic children than in females. The frequency of positive endoscopic findings was decreased with increasing age groups in dyspeptic children.

Conclusions: OGD diseases were slightly more common among boys than girls with dyspepsia. OGD cases are higher in younger age group (<5 years) than those of older age groups. The parents are strongly advised to take care for their children regarding nutritional habits, stress and other socio-cultural factors that may play role in increasing the risk of development of OGD diseases among dyspeptic children in our province.

Key words: Oesophago-gastroduodenal diseases, endoscopy, dyspepsia, child.

Corresponding author: Abdulla Eltaif Jassim

Introduction:

Dyspepsia is a remarkable common symptom in the general population⁽¹⁾. Dyspepsia is a collective term for non specific symptoms thought to originate from upper gastrointestinal tract. Causes of dyspepsia include upper gastrointestinal disorders such as peptic ulcer, other gastrointestinal disorders including irritable bowel syndrome, or it can be the result of systemic disease or unwanted effect of drugs⁽²⁾.

The prevalence of dyspepsia has varied between 7-34.5% (3-5). Guidelines from the United Kingdom⁽³⁾ and Canada⁽⁴⁾ use the term to mean all symptoms referable to the upper gastrointestinal tract whereas the ROME II definition⁽⁵⁾ excludes patients with predominant reflux symptoms. Dyspepsia is estimated to account for 2-5% of primary care office visits and 30% of consultations by a gastroenterologist^(1, 6-7).

Dyspepsia has a significant impact on quality of life⁽⁸⁾ and results in enormous social cost, both direct medical costs for physician visits, diagnostic tests, and medications, and indirect costs from absenteeism or diminished productivity at work⁽⁹⁾. Traditionally, (90%) of cases of chronic or recurrent abdominal pain have been considered to have functional disorders e.g functional dyspepsia. Having made a diagnosis of functional dyspepsia, a number of investigations have been performed and found normal, especially those who underwent upper gastrointestinal endoscopy, upper abdominal ultrasonography, and routine hematology and biochemistry screening blood tests⁽¹⁰⁾.

Endoscopy is useful for the assessment of gastrointestinal disorders. However, patients with dyspepsia were subjected to multiple endoscopies for evaluation of upper gastrointestinal diseases⁽¹¹⁾.

The prevalence of dyspepsia among children was not determined, and remains poorly defined in Al-Anbar province. The risk factors and upper gastroduodenal disorders also remain poorly described in dyspeptic children as well as in the general population.

The aim of this study is to determine the frequency distribution of different oesophago-gastroduodenal disorders among dyspeptic children using fiberoptic endoscope evaluation in Al-Anbar governorate.

Patients and Methods :

This is a cross sectional study conducted at the Gastroendoscopic Unit of Al-Ramadi Teaching Hospital from the period of 1 May 2002 to 30 August 2007.

A total of two hundred and seventy children with dyspepsia were included in this study; 132 (48.9%) were males and 138 (51.1%) were females, giving a female to male ratio of 1.04:1. The mean age was 10.52 ± 4.3 years with age ranging from 1-16 years. Criteria for Selection a Patients with Dyspepsia was: Upper Abdominal Pain Associated with Nausea and Poor Dietary intact)

All dyspeptic children were subjected to OGD after taking full medical history from the children from their parents and then careful clinical examination was done for each child. After over night fasting, early morning OGD was done for each child using fiberoptic (F629w pentax) endoscope.

All children of 10 years old or less were subjected to a general anesthesia before doing OGD.

The collected data was analyzed statistically using Statistically Package for Social Sciences (SPSS) version (11.5) programmer. P value less or equal to 0.05 ($P \leq 0.05$) was considered to be statistically significant.

Results:

Between 1 May 2002 -30 August 2007, 270 children was enrolled in the study 132 (48.9%) were male, and 138 (51.1%) were female.

Table (1) shows the frequency distribution of positive and negative cases according to OGD findings among examined children in relation to sex. There was a significantly higher prevalence of negative endoscopic findings among dyspeptic children (normal or functional dyspepsia) (62.2%) than those with positive findings (37.8%)($p < 0.05$).

Within the positive cases, the percentage of positive endoscopic findings among male dyspeptic children 54 (52.9%) was slightly higher than that in females 48 (47.1%); meanwhile the percentage of

negative cases was slightly higher among female dyspeptic children 90 (53.6%) than in males 78 (46.4%). These differences were not found to be statistically significant ($p>0.5$).

Table 1: Frequency Distribution of Positive and Negative Cases According to Oesophago-Gastroduodenoscopy Findings in Relation to Sex.

Sex	Negative cases		Positive cases		Total No. %	
	No.	%	No.	%		
Male	78	46.4	54	52.9	132	48.9
Female	90	53.6	48	47.1	138	51.1
Total	168	62.2	102	37.8	270	100.

Table (2) shows the mean and standard deviation of the age with respect to sex and results of oesophago-gastroduodenoscopy. This table shows that the mean age of positive male cases was

significantly lower than that of negative cases ($p<0.05$); while the mean age of female positive cases was found to be significantly lower than that of negative cases ($p<0.05$).

Table (2): Mean and standard deviation of age of the positive and negative cases according to oesophago-gastroduodenoscopy findings

Sex	Negative cases	Mean Sd.	Positive cases	Mean Sd.	Total	Mean Sd.
Male	11.48	3.19	8.26	4.65	10.09	4.16
Female	11.76	4.00	9.38	4.88	10.94	4.42
Total	11.63	3.62	8.77	4.72	10.52	4.30

Table (3) shows the frequency distribution of the positive oesophago-gastroduodenal findings among dyspeptic children. Among those with positive findings, duodenal ulcer was detected in 68.6% of the positive endoscopic findings, followed in order by gastritis in 11.4% and

gastric ulcer in 8.6%, oesophagitis in 5.7% and duodenitis was also detected in 5.7% of the positive endoscopic findings. Distribution of these positive OGD findings was arranged in descending order according to their occurrence in this table.

Table (3): Frequency distribution of positive cases according to oesophago- gastroduodenoscopy findings.

Endoscopy findings	Frequency(no.)	Percentage(%)
Duodenal ulcer	71	67.6
Gastritis	12	11.4
Gastric ulcer	10	9.5
Oesophagitis	7	6.7
Duodenitis	5	4.8
Total	105	100.0

The percentage of positive findings among dyspeptic children was higher in the age group (<6 years) (50.5%) than in age group (6-10 years) (28.6%) and age

group (11-16 years) (20.9%). This difference was found to be statistically significant (<0.05). Table 4.

Table (4): Frequency distribution of positive cases according to oesophago- gastroduodenoscopy findings in relation to the age groups.

Age group	Duodenal ulcer	Gastritis	Gastric ulcer	Oesophagitis	Duodenitis	Total %
< 5	35	5	6	5	2	53(50.5)
6-10	21	4	3	1	1	30(28.6)
11-16	15	3	1	1	2	22(20.9)
Total	71	12	10	7	5	105

Discussion:

The prevalence of dyspepsia among children varies in different populations. Although these may be due to epidemiological differences, it is also apparent that the varying definition used in different studies lead to this discrepancy⁽¹²⁾.

In studies using recurrent abdominal pain in children as a definition of dyspepsia was first described by Apley and Naish in 1958 who found that the incidence in their community-based study was 10% and the majority of cases were diagnosed as non-organic or functional dyspepsia⁽¹³⁾.

In the current study, the prevalence of negative endoscopic findings (normal or functional dyspepsia) was significantly higher than in positive endoscopic findings.

This finding was in agreement to that reported by Rejchart et al⁽¹⁴⁾ who found that majority of younger dyspeptic persons are healthy (functional dyspepsia).

Our finding was also similar to study conducted by Hyams⁽¹⁵⁾ who reported that 62% of the dyspeptic children were recognized to have functional dyspepsia and in children who had normal endoscopic findings, 70% were either asymptomatic or much improve after the 0.5-1.9 years follow-up period.

On the other hand, our result was not parallel to other study depending on ROME II criteria for classification of dyspepsia, that collecting data from 400 consecutive unselected patients with dyspepsia who sought medical attention. Heikkien et al⁽¹⁶⁾ found that 135 patients (35%) had functional dyspepsia, in which 22% were ulcer-like, 28% were dysmotility-like and 50% were nonspecific dyspepsia; meanwhile McGrath et al , found no difference between a group of children with dyspepsia or recurrent abdominal pain(RAP) and control group in term of stressful events, extreme personality characteristics and imitation of abdominal pain from the family members, thus the perception that the majority of (RAP) in children had a psychogenic origin⁽¹⁷⁾. Similar study conducted by Raymer et al⁽¹⁸⁾ also failed to find any difference between organic and non-organic cause in children with RAP. Our finding indicates that the majority of our dyspeptic children were of normal or functional dyspepsia or of non-organic cause.

Regarding the frequency distribution of positive cases among dyspeptic children according to sex, there is no significant difference between male dyspeptic children and females for acquiring oesophago-gastroduodenal disorders. El-Mouzan et al⁽¹⁹⁾ detected a higher rate of peptic ulcer among boys than girls; meanwhile Rejchrt⁽¹⁴⁾ detected a higher frequency among women than men in Czech Republic. Our finding indicates that both sexes have the same chance for having oesophago-gastroduodenal disorders which means both sexes exposed equally to risk factors concerning oesophago-gastroduodenal disorders such as nutritional habits, social habits and life-style.

Age was another significant demographic factor that influenced the prevalence of positive cases among dyspeptic children in this study.

The results show a significantly higher rate of positive cases among younger age group than older age groups.

Similar results were also observed in Chinese study which revealed a high peak in the rate of dyspeptic patients with oesophago-gastroduodenal disorders in younger age groups⁽²⁰⁾, although other studies reported that the prevalence of positive cases among dyspeptic patients increases with increasing in age⁽²¹⁾.

Our result was also in agreement to that detected by Ukarapol et al⁽²²⁾ and Gaith et al⁽²³⁾. However, this result indicated that children are more likely to be contracting oesophago-gastroduodenal disorders among dyspeptic children in early age; this may be due to improper relationship between children and family members from the time of weaning until reaching six years old regarding nutritional habits and psycho-social impacts.

The present study revealed a high frequency of duodenal ulcer(DU) and gastritis occurred in older age groups when compared to other positive oesophago-gastroduodenal findings in dyspeptic children; meanwhile Hyams et al⁽¹⁵⁾ revealed that oesophagitis followed in order by gastritis and duodenitis in dyspeptic children are more common in older age groups compared to other positive oesophago-gastroduodenal findings.

The frequency distribution of positive cases according to positive oesophago-gastroduodenal findings in dyspeptic children was also studied. DU followed in order by gastritis have a higher prevalence when compared to other positive endoscopic findings.

This finding can be interpreted in the case that there may be existing of some confounding factors that contribute to the contraction of these diseases more common among children with dyspepsia than other endoscopic positive findings.

In conclusion the majority of endoscopic findings were dyspeptic children with normal or functional dyspepsia, duodenal ulcer was the most frequent upper gastrointestinal disease causing dyspepsia meriting oesophago-gastroduodenoscopy in children. Both sexes have the same chance for contracting oesophago-gastroduodenal disorders in dyspeptic children; meanwhile the frequency distribution of oesophago-gastroduodenal disorders were more common in younger age group (<5 years) than other age groups. We recommend to follow-up those of positive cases and performing further investigations to understand the proper aetiological factors underlying these diseases in dyspeptic children, nutritional habit as well as risk factors that can develop such diseases must be declared through a public health media in order to be avoided, parents are strongly advised to take care for their children especially those of age below 10 years old. Lastly, we recommend further community-based study to evaluate or assess the prevalence and other epidemiological criteria for uninvestigated dyspepsia in our community.

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