

GASTROESOPHAGEAL REFLUX DISEASE: CLINICAL AND ENDOSCOPIC CORRELATES

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ABSTRACT

This prospective study considered 146 patients attended the endoscopy units in Baghdad Teaching Hospital and the Gastroenterology and Hepatology Teaching Hospital in the Medical City in Baghdad from August 2000 till August 2001. They were diagnosed as sufferers of gastroesophageal reflux disease (GERD). The study tried to differentiate on base of the clinical presentation between patients with GERD who have endoscopic peptic esophagitis and those who are free from this complication. It was found that dysphagia has a statistically significant association with peptic esophagitis while age, male gender, heartburn, noncardiac chest pain, smoking and alcoholism have no significance for the intended differentiation despite the observation that, aging, male gender and smoking were determinants of higher grades of peptic esophagitis in case they are present.

Key words: gastroesophageal reflux. GERD, peptic esophagitis.

BACKGROUND

Gastroesophageal reflux disease is a very common problem in clinical practice. Most common complication of that disease is the development of peptic esophagitis of variable magnitude of severity which occurs in 40% of those patients, other complications are possible with much less frequency as peptic esophageal stricture and Barrett's esophagus.

METHODS

The study was performed during the period from August 2000 till August 2001 on 146 patients attended the endoscopy units in the Gastroenterology and Hepatology Teaching Hospital and Baghdad Teaching Hospital in the Medical City in Baghdad who were complaining from symptoms of gastroesophageal reflux disease. They were interviewed and questioned about

there symptoms, habits of smoking or alcohol use. Their past medical history was analyzed and they were examined clinically and their body mass indices were calculated. A patient was enrolled in the study if he has no significant past or current medical illness and has one or more of the following symptoms in moderate severity at least twice weekly for the last one month as a cause for their medical consultation:

Heartburn: a retrosternal burning sensation radiating from the xiphisternum up to the neck.

Regurgitation: the effortless return of gastric or esophageal content in the oropharynx without nausea.

Dysphagia: the sticking of a food bolus passing down the esophagus.

Patients were taking H2 blockers or PPI in mucosal healing doses were excluded. OGD was done for every patient and was interpreted (according to the modified

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Savary- Miller Classification) in the way down to avoid traumatic artifacts. According to the OGD results patients were put into two groups; those with completely normal OGD and those with endoscopic peptic esophagitis with or without associated endoscopic findings.

RESULTS

Table1: shows that the total patient sample was 146 patients put into two groups. Group A included the patients with endoscopic peptic esophagitis and associated endoscopic findings (if present) and is called the esophagitis group. The other group (group B) included the patients with completely normal OGD and is called the normal OGD group.

This table shows that the average age of the esophagitis group patients was (40.16 ± 5.16) years while for the normal OGD group patients was (38.76 ± 12.54) years with no statistically significant difference between the two groups. Similar findings were obtained regarding the frequency of heartburn attacks per week which was (5.17 ± 1.94) attack /week in the esophagitis group and (5.6 ± 1.8) in the normal OGD group. The average duration of heartburn attack in the esophagitis group was shorter than that in the normal OGD group (2.5 ± 2.33) hours and (5.42 ± 5.32) hours respectively with a $P < 0.05$.

No significant difference was observed between the esophagitis and normal OGD groups regarding the duration (in years) of having chest pain attacks, duration of smoking and the number of cigarettes smoked per day per patient and average amount (in gram) of alcohol consumed per week per single patient, while the duration of alcohol consumption (in years) per single patient was significantly longer in the esophagitis group than the normal OGD group; (78 ± 86 for the esophagitis group versus 18 ± 5.44 for the normal OGD group) $P < 0.05$.

Table 2: compares the clinical history of the two groups. It shows that 80% of the normal OGD groups were males while only 61.5% of the normal OGD group were males, a statistically significant observation $P < 0.05$. No difference was observed between the two groups regarding the number of smokers and alcohol consumers also no difference observed regarding the number of chest pain complainers.

Table 3: describes the endoscopic findings in the esophagitis group (96 patients). It shows that 28.2% of the patients had grade one esophagitis and 35.4% of the patients had grade two and similar number has grade 3 esophagitis. No one has grade four esophagitis in our study. Hiatus hernia and gastritis were the most common associated findings with esophagitis 29.2% and 22.9% respectively. Duodenal ulcers found in 12.5% of the patients while gastric ulcer and Barrettes esophagus were rare findings 2.1 % for each.

Table4: show distribution of the clinical observation according to the grade of endoscopic peptic esophagitis. It shows that there is no significant difference in the number of smokers among the different grades of peptic esophagitis.

Chest pain was present in 60.7% of patients with grade 1 esophagitis and 26.5% in grade 2 and 44.1 % in grade 3 endoscopic peptic esophagitis groups with a $P < 0.05$ for that difference. No patient with grade 1 esophagitis had dysphagia while 14.7% of grade patients with grade 2 and 14.7% of patients with grade 3 esophagitis has dysphagia for solid food, with a $P < 0.001$. However; dysphagia for liquid was much less common and observed in 5.9% of patients with grade 3 esophagitis only.

Table5: shows the relationship between the body mass index and grade of esophagitis and a significant association was found by ANOVA test between the

body mass index and the grade of esophagitis ($f=8.64$ & $P<0.0004$).

Multiple linear regression analysis was made to circumvent the bias might have been imposed by the patients demographic factors. It was observed that however; a male patient with higher number of cigarettes smoked per day and less weight is more prone to have a higher grade esophagitis no independent effects were found for the age, amount of alcohol consumed per patient per week or the duration of alcohol intake and for the patients height and the duration of smoking.

DISCUSSION

In this study there was no significant difference in age between esophagitis and non esophagitis groups. A total of 99 males were enrolled in this study while the total number of females in both groups was 47 with a female to male ratio of 2.1:1 and there were significantly more males in the non esophagitis group than in the esophagitis group. In the esophagitis group male gender was significantly associated with higher grade of esophagitis in consistence with study of Al-Karboli⁽⁹⁾. Male gender found in this study to be an independent variable determining higher grade of GERD. The frequency of heartburn attacks show no significant difference between the two groups, the same was concluded by another study that symptoms are non reliable in their on in making diagnosis of peptic esophagitis⁽¹⁰⁾. But a shorter duration of the single attack was significantly associated with the esophagitis group which may be explained by the fact that some patients has paradoxical impairment of pain sensation in the higher grade of esophagitis because of mucosal damage. Dysphagia was very significantly associated with the esophagitis group being reported by no

one of the non-esophagitis group versus 11.6% of patients in the esophagitis group, this observation is dissimilar to what was observed in another study⁽¹¹⁾. Which had shown no difference in the prevalence of esophagitis among complainers and non-complainers from dysphagia of GERD patients.

Dysphagia associated significantly with higher grades of endoscopic esophagitis in consistence with Al-Karboli⁽⁹⁾ study. There was no significant difference among the two groups regarding the complaint of chest pain; a finding in agreement with another study by Richter JE⁽¹²⁾. Smoking is known to increase reflux episodes by impairing the mechanisms preventing reflux, reducing the salivary titrable base and inducing cough. There was no significant difference between the two groups in regard to the number of cigarettes smoked per day per patient, however; within the group of endoscopic esophagitis the increasing number of cigarettes smoked daily by the patient was significantly associated with higher grade of esophagitis and found to be an independent variable determining higher esophagitis grade. No difference existed between the esophagitis and non-esophagitis groups in regard to the amount of alcohol consumed per week, but there was significant association of longer duration in (years) of consumption of alcohol with the esophagitis group, which is a puzzling result which might be caused by the reluctance of alcoholics to report the true details regarding their drinking habit or due to the exclusion of patients with liver disease from the study by the study design. In consistence with Al-Karboli study the most common associated endoscopic findings with esophagitis were gastritis and hiatus hernia and both found to have a significant association with higher grades of peptic esophagitis. Duodenal ulcer was more frequent in the higher grades of

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esophagitis a similar observation reported by other workers ^(10, 14).

Barrett's esophagus and gastric ulcer were rare findings in consistence with Al-Karboli Observation.

CONCLUSIONS

1. No difference was found in the symptomatology of gastroesophageal reflux disease

among different sexes and different age groups.

2. Heartburn and regurgitation were common in patients with gastroesophageal reflux disease but not specific enough to exclude other diseases.
3. Smoking and alcoholism are not predictors of the presence of peptic esophagitis in patients with symptoms suggestive of reflux disease but they predict higher grade of esophagitis if it is present.

TABLES:

Table1: demographic features of patient sample studied

Demographic character	Group A	Group B	P value
	No. (mean ±SD)		
Duration of heartburn attacks in hours	96 (2.51±2.33)	50(5.42±5.35)	P<0.05
Duration of alcohol intake in years	12(18.33±5.44)	15(7±8.46)	P<0.05
Age in years	96(40.16±15.62±)	50(38.76±12.54)	NS*
BMI	96(24.96±3.04)	50(25.78±5.36)	NS
Frequency of heartburn attacks/week	96(5.17±1.94)	15(5.6±1.8)	NS
Duration of chest pain in years	39(20.69±23.15)	11(7.45±6.6)	NS
Duration of smoking in years.	96(6.76±10.99)	23(11.3±8.8)	NS
No. of cigarettes/day	40(17.25±10.25)	24(14.41±8.45)	NS
Amount of alcohol consumed/week	12(0.42±0.11)	15(0.3±0.38)	NS

*non significant

Table 2: Clinical observations in the studied patient sample.

Clinical observation		Group A(patients with esophagitis)	Group B (patients with normal OGD)	P value	OR*
		No (%)			
Gender	Male	59(61.5%)	40(80%)	P<0.05	0.4
	Female	37(38.5%)	10(20%)		
Dysphagia		17(17.7%)	0	P<0.05	
Smokers		44(45.8%)	23(46%)	NS	
Alcoholics		12(12.5%)	9(18%)	NS	
Chest pain		41(42.7%)	21(42%)	NS	
Heartburn		96(100%)	50(100%)	NS	

*odds ratio

Table3: Endoscopic findings in 96 patients (group A) with GERD submitted for endoscopy

Endoscopic finding		NO.(%)
Endoscopic* esophagitis	Grade1	28(29.2%)
	Grade2	34(35.4%)
	Grade3	34(35.4%)
Hiatus hernia		28(29.2%)
Barrett's esophagus		2(2.1%)
Gastritis		22(22.9%)
Gastric ulcer		2(2.1%)
Duodenal ulcer		12(12.5%)

*no patient found in grade 4 endoscopic esophagitis.

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Table4: distribution of clinical observations according to the grade of endoscopic esophagitis.

Clinical observation		Grade of endoscopic esophagitis*			P value
		Grade1	Grade2	Grade3	
Chest pain		17(60%)	9(26.5%)	15(44.1%)	P<0.05
Alcoholism		8(28%)	2(5.9%)	2(5.9%)	P<0.05
Heartburn		28(100%)	34(100%)	34(100%)	ND**
Smoking		12(42.9%)	16(47.5%)	16(47.5%)	NS
dysphagia	Solid	0	12(14.7%)	12(14.7%)	NS
	liquid	0	2(2.9%)	2(5.9%)	NS

No patient found in grade 4 esophagitis.

** Not done.

Table5: distribution of endoscopic findings according to the grade of esophagitis.

Endoscopic findings	Grade of endoscopic esophagitis*			P value
	Grade1	Grade2	Grade3	
Duodenal ulcer	0	7(20.6%)	5(14.7%)	P<0.05
Duodenal stenosis	0	7(20.6%)	3(8.8%)	P<0.05
Barrett's esophagus	0	2(5.9%)	0	NS
Hiatus hernia	0	8(23.8%)	20(58.8%)	P<0.0001
Gastritis	4	10	8	P<0.05
Gastric ulcer	2(7.1%)	0	0	NS

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مرض الانعكاس المعدي المريئي – دراسة العلاقة بين الأمراض السريرية والعلامات الناضورية

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ملخص البحث:

اجريت هذه الدراسة على ١٤٦ مريضاً من مراجعي وحدات تنظير الجهاز الهضمي في مستشفى بغداد التعليمي ومستشفى امراض الجهاز الهضمي والكبد التعليمي في مدينة الطب في بغداد خلال الفترة من بداية شهر اب سنة ٢٠٠٠ وحتى نهاية شهر اب سنة ٢٠٠١ وكانوا يعانون من اعراض الانعكاس المعدي المريئي.

هدفت الدراسة الى محاولة التفريق بالاعتماد على الاعراض السريرية بين المصابين من بين المرضى المذكورين بالتهاب المريء الحمضي الرجوعي المحسوس ناضوريا وبين المرضى غير المصابين به. وتبين من خلال هذه الدراسة ان شكوى صعوبة البلع ذات دلالة احصائية مهمة تشير الى التهاب المريء الحمضي الرجوعي في حين لم تكن هناك علاقات احصائية مهمة تربط بين الاصابه بهذا الالتهاب مع عمر المريض وجنسه وشكوى حرقه الفؤاد والام الصدر غير القلبية والتدخين او تعاطي الكحول. ولكن تبين ان تقدم سن المريض والجنس الذكري والتدخين جميعها عوامل محدده لدرجات اعلى من الالتهاب الحمضي للمريء في حال وجوده.

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