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### Original Article

# The prevalence of Reflux Associated Pharyngitis in Patients who underwent Upper Gastrointestinal Endoscopy at Prince Rashid Hospital

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#### ABSTRACT

**Objectives:** The aim of this study was to determine the prevalence and the epidemiologic characteristics of reflux associated pharyngitis in adult patients (>16 years) who underwent Upper Gastrointestinal Endoscopy at Prince Rashid Hospital in the north of Jordan. **Methods:** A retrospective study was performed on Patients who underwent Upper Gastrointestinal Endoscopy examinations done in Prince Rashid Hospital between September 2010 and November 2013 were included in the study. As with the lower esophageal sphincter, if the upper esophageal sphincter doesn't function properly, acid that has back flowed into the esophagus is allowed into the throat and voice box. When this happens, it's called reflux associated pharyngitis. When endoscopy result showed typical findings of reflux associated pharyngitis and good response to anti reflux drugst (proton pump inhibitors), we correlated the diagnosis with the patients data about age, gender, presenting symptoms, cigarette smoking and body mass index. **Results:** A total of 2627 patients underwent upper endoscopy during the study period for different indications. Of the 2627 patients a 53 (2%) patients were found to have typical endoscopic findings of reflux associated pharyngitis. Of the 53 patients found to have reflux associated pharyngitis, there were 35 (66%) men. The mean age was 48.2 (range 16-81) years. Hiatal hernia of different sizes was found in 35 (62%) patients of the endoscopically suspected reflux associated pharyngitis. There was a significant correlation between reflux associated pharyngitis and age, cigarette smoking and BMI. **Conclusion:** The prevalence of reflux associated pharyngitis in our patients who underwent Upper Gastrointestinal Endoscopy at Prince Rashid Hospital is 2%. Studies are needed to determine the prevalence in the general population and to investigate the possible risk factors, so that a proper plan of action and treatment is put in place.

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### 1. Introduction

Gastroesophageal reflux disease (GERD) is a debilitating condition, characterized by symptoms of chronic, intermittent heartburn (a burning sensation in the chest and throat), and acid regurgitation (a sensation of acid in the esophagus or mouth), with esophagitis seen in a substantial minority of patients. (1) Up to 20% of the population is thought to be affected by at least weekly reflux symptoms, and it is estimated that GERD accounts for around 5% of

a primary-care physician's workload. (2) GERD is a chronic disease, with over half of persons with weekly reflux symptoms affected for more than 5 years. (3) In addition to the cardinal symptoms of heartburn and acid regurgitation that cause patients discomfort and pain, GERD is associated with a range of atypical symptoms of esophageal and extra-esophageal origin, including sleep disturbance, chest pain, asthma, chronic cough, and hoarseness. (4) The impact of this host of symptoms and consequences on the everyday lives of patients with GERD is often overlooked. (5)

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An estimated 20 to 60 percent of patients with GERD have otolaryngological symptoms without any appreciable heartburn. The GERD is responsible for remote extraesophageal presentations like cough, hoarseness, asthma, recurrent pneumonia, pharyngeal or oral diseases, chest ache, nocturnal cough and obstructive apnea. (6-8)

Prince Rashid Hospital is located in Irbid governorate in the north of Jordan. Prince Rashid Hospital is one of seven peripheral Hospitals related to the Royal medical services. It is a teaching hospital, receives referrals from all medical sectors in different parts at the north. It serves the armed forces and the dependents, in at least 60% of the north of Jordan population (About 1,500,000).

### Methods

Our data were collected from the records of the gastrointestinal unit over 3 years period. The records for all patients aged 16 years or more who underwent upper endoscopy between September 2010 and November 2013 were retrospectively evaluated.

Emergency endoscopies as: 1. acute upper gastrointestinal bleeding, 2. Corrosive ingestion, 3. foreign body ingestion, and food bulbous impaction were excluded from the study.

The endoscopy room set up, the instruments, and nursing staff were the same for all the patients. All endoscopies were done under local anesthesia using pharyngeal lignocaine (lidocaine) spray. Fibro-optic uni-stiffness Gastroscope was used (PENTAX EG 3985, PENTAX Corporation-Germany). All the procedures were done by a single endoscopist, that to eliminate the inter-observers variations.

Objective findings were evaluated, including the presence of reflux associated pharyngitis, peptic ulcer disease and hiatal hernia.

We defined reflux associated pharyngitis as one or more of the following four criteria 1) Dry irritated pharynx aggregates or patches on the posterior pharyngeal wall. 3). Severe erythematous pharynx in addition to a good response to a four weeks treatment with proton pump inhibitor drugs and disappearance of the symptoms. We defined hiatal hernia as any gastric mucosa above the gastro esophageal junction.

### Results

A total of 2627 patients underwent upper endoscopy during the study period for different indications ((61% males) and (39% females), mean age was 35.1 years (range 16-86)). Of the 2627 patients, 53 (2%) found to have typical endoscopic findings of reflux associated pharyngitis.

Of the 53 patients found to have reflux associated pharyngitis, there were 35 (66%) males and 18 (34%) females with mean age of 48.2 years (range 24-81) years. The male to female ratio was 1.94 to one as shown in table 1.

The rate of referral of cases with symptoms of pharyngitis during the 3 years study period was about 18 per year in a hospital serving about 1.6 million population.

Hiatal hernia of different sizes was found in 35 (66%) patients of the endoscopically suspected reflux associated pharyngitis. Also, the prevalence of hiatus hernia was found as 552 (21%) within overall upper endoscopy cases done in our hospital (n=2627).

42 (79%) of patient with reflux associated pharyngitis had history of smoking or x-smokers, and 31 (58%) of patient had BMI more than 28. 16 (30) of patients found to have esophagitis of different grades and 4 (8%) showed peptic ulcer disease as shown in table (1). The most common symptoms of those with pharyngitis were sore throat seen in 41%, too much throat mucus in 23%, and chronic throat clearing in 21% as shown in table (2).

**Table (1): Characteristics of patients diagnosed Pharyngitis induced by Gastropharyngeal reflux.**

Characteristics	Patients (n = 53)	%
<b>Age</b>		
Mean age (years)	48.2	
Age range	24-81	
< 30 Years	9	17
30-50 Years	17	32
> 50	27	51
<b>Gender</b>		
Men	35	66
Women	18	34
<b>Education</b>		
Illiterate	3	5
School	28	53
University	22	42
<b>Smokers or recently x-smokers</b>	42	79
<b>Body mass index &gt; 28</b>	31	58
<b>Esophagitis</b>	16	30
<b>Peptic ulcer disease</b>	4	8

**Table: (2) Symptoms of in patients diagnosed Pharyngitis induced by Gastropharyngeal reflux.**

Symptoms	Patients (n = 53)	%
Sore throat	22	41
Too much throat mucus	12	23
Chronic throat clearing	11	21
Lump-in-the-throat sensation	9	17
Food and/or pills getting stuck	7	13
Hoarseness	3	7
Difficulty swallowing	3	6
Choking episodes	2	4
More than one symptoms	25	47

**Table: (3) Possible risk factors for Pharyngitis induced by Gastropharyngeal reflux.**

Risk factor	Patients (n = 53)	%	P- value
Age			
< 35 years	35	66	
> 35 years	18	34	< 0.05
Male	35	66	
Female	18	34	< 0.05
BMI			
2-25	22	23	< 0.05
> 28	31	77	
Smokers or x- smokers	42	79	
Non smoker	23	21	< 0.05
Hiatus hernia	35	66	
No hernia	18	34	< 0.05

### Statistical Analysis

Chi square was used for statistical analysis, P – value was considered significant if less than 0.05.

### Discussion

This study aimed to evaluate the prevalence of endoscopic diagnosis of reflux associated pharyngitis in a general upper gastrointestinal endoscopy population. Our results revealed a considerable prevalence (2%) of reflux associated pharyngitis in our patients who underwent upper gastrointestinal endoscopy at Prince Rashid Hospital. This pattern might be related with the increase in the prevalence of gastro esophageal reflux disease (GERD) in our population in Jordan which may be related to high prevalence of smoking and obesity. Studies from other countries have shown a very low prevalence of GERD and erosive esophagitis (7). From a 22,628 upper gastrointestinal endoscopies were performed in Hong Kong showed a prevalence of GERD and erosive of 3.8%. The authors found that the endoscopic prevalence of GERD esophagitis, and hiatus hernia was lower than in western countries(8).

Conflicting results have been proposed about the prevalence of pharyngitis induced by gastro esophageal reflux. Some factors, such as body mass index, dietary factors, tobacco consumption, and under/ over diagnosis might be responsible for these differences. Well organized prospective studies involving different part of Jordan with a well validated questionnaire the ENT and endoscopy evaluation are needed to show the actual prevalence.

Our study showed a significant correlation between reflux associated pharyngitis and Male gender, age, cigarette smoking, BMI and hiatal hernia(3). In our patients, hiatal hernia of different sizes was found in 35 (66%) patients of the endoscopically suspected reflux associated pharyngitis. Other studies have shown that patients with reflux associated pharyngitis have more and larger hiatus hernia than patients with uncomplicated reflux disease (9-11).

Deficiencies in our study are; First: we do not know the actual prevalence of reflux associated pharyngitis in the general population of Jordan to compare. Second: esophageal pH monitoring is not available at prince Rashid hospital, which is the current gold standard for diagnosis of gastroesophageal reflux disease (GERD). It provides direct physiologic measurement of acid in the esophagus and is the most objective method to document reflux disease, assess the severity of the disease and monitor the response of the disease to medical or surgical treatment. It can also be used in diagnosing laryngopharyngeal reflux. Third: The number of reflux associated pharyngitis patients, may be rising in Jordan (represented by the small sample of prince Rashid hospital), but still statistically not enough to give a firm idea.

In conclusion; The prevalence of reflux associated pharyngitis in our patients who underwent upper gastrointestinal endoscopy at Prince Rashid Hospital is 2%. Upper gastrointestinal endoscopy may be a useful, and effective examination in patients who have gastro esophageal and pharyngeal complaints. It gives a rapid and definitive diagnosis, which satisfies both patients and physicians. Our results need to be evaluated by a country-wide, large-scale studies to determine the prevalence in the general population and to investigate the possible risk factors.

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