

## Laryngeal Disorders in Egyptian Patients with Gastroesophageal Reflux Disease

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### Abstract

**Background:** Gastroesophageal reflux disease (GERD) is chronic illness caused by reflux of gastric acidic contents back up into the esophagus causing wide range of symptoms. Laryngeal reflux is caused by A mechanism which seem identical to GERD some researchers think there is correlation between the prevalence of the two diseases.

**Aim of Study:** The study aimed to evaluate the prevalence of laryngeal reflux in cases of gastroesophageal reflux disease.

**Methods:** In this Prospective study evaluation of the prevalence of Laryngeal reflux symptom in cases of GERD was done in 200 patients by applying Reflux Finding Score (RFS) and Reflux Symptoms Index (RSI). They were divided into two groups Group-I; included 100 patients with Laryngeal reflux symptoms, Group-II; included 100 patients without Laryngeal reflux symptoms and this group was subdivided by laryngoscopic finding into Group-IIA; Laryngeal reflux free and Group-IIB; silent laryngeal reflux according to RFS.

**Results:** GERD was found in all 200 (100%) patients included in the study Group I included 100 patients all of them had symptoms and signs of Laryngeal reflux, Group II included 100 patients didn't have symptoms of Laryngeal reflux of them 92 (92%) patients (Group IIA) were found to be free of Laryngeal reflux signs and 8 (8%) patients (Group IIB) were found to have signs of laryngeal reflux (silent laryngeal reflux).

**Conclusion:** Manifest Laryngeal reflux was found in 100 (50%) of GERD patients, silent Laryngeal reflux was found in 8 (8%) of GERD patients not complaining of Laryngeal reflux symptoms.

**Key Words:** Laryngopharyngeal reflux – Gastroesophageal reflux disease.

### Introduction

**GASTROESOPHAGEAL** reflux disease (GERD) is a chronic disorder resulting from the retrograde flow of gastroduodenal contents into the esophagus.

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Reduced LES pressure play a significant role in patients with moderate to severe disease, and exacerbated by obesity [1]. Other factors that decrease LES pressure and contribute to GERD are medications, lifestyle behaviors, and certain foods [2]. Complications of GERD include esophageal ulcers, peptic esophageal strictures, Barrett's esophagus and esophageal adenocarcinoma [3]. The typical manifestations of GERD are heartburn, regurgitation, and dysphagia [4]. Atypical manifestations of GERD refer to symptoms that are extraesophageal including, ear, nose and throat [5].

Laryngopharyngeal reflux (LPR) is the result of retrograde flow of gastric contents to the laryngopharynx. It account for 10% of patients presenting to otolaryngologist's office [6], mostly presenting with throat clearing (98%), persisting cough (97%), and hoarseness (95%) [7]. Laryngoscopic signs of LPR are laryngeal irritation and inflammation but several findings are highly suggestive of LPR although not pathognomonic [6].

**Aim of the work:**

The aim of this work was to evaluate the prevalence of laryngopharyngeal reflux in cases of gastroesophageal reflux disease by upper GI endoscopy and direct fibroptic laryngoscopy.

### Patients and Methods

This study was conducted in the period between Sept 2015 and June 2016. Cases were selected from Gastrointestinal Endoscopy Unit, Faculty of Medicine, Al Azhar University. and enrolled 200 GERD patients divided into two groups: Group (I) i.e. Manifest LPR: Included 100 GERD patients complaining of LPR symptoms and were confirmed to have LPR by laryngoscope. Group (II) i.e. GERD without LPR symptoms: Included 100 patients.

They were further subdivided into two subgroups according to their laryngoscopic findings; group IA: LPR-free whose laryngoscopic examination was free. group IIB: Silent LPR who were reported to have laryngoscopic findings. Adult patients from both genders and diagnosed endoscopically as GERD were included. Any patients with Alcohol intake, smoking, chronic tonsillitis and or chronic sinusitis, laryngopharyngeal malignancy, allergy, taking NSAID, Ca-channels blockers, nitrates or theophylline or refused to participate in the study were excluded. The selected patients were subjected to written consent, full history and examination, routine lab investigations, upper G.I endoscopy and direct fiberoptic laryngoscope.

### Results

The study included 200 patients with GERD subdivided into two groups in group I (Manifest LPR) the mean age of the patients was 40.4 years and there was females predominance 52% while males were 48% of the studied group, 60% were living in urban areas while 40% of the studied group lived in Rural areas. The mean BMI in group I was 32.9. As regard group II (Non-Manifest LPR) mean age was 39.8, males were predominant by 52% while females were 48% of the studied group, 56% of the studied group lived in Urban areas while 44% lived in Rural areas. The mean BMI in groupie was 31.6 these data were statistically non

significant between the two groups shown in Table (1). Heartburn and regurgitation were the most common symptoms 80 patients (80%) and 72 patients (72%) in group I and group II respectively and were statistically non significant between the two groups. Halitosis was in 60 patients (60%) in group I and in 24 patients (26.1%) in group II, dysphagia was in 56 patients (56%) in group I and in 12 patients (12%) in group II, nausea was in 48 patients (48%) in group I and in 20 patients (21.7%) in group II and appetite change was in 44 patients (44%) in group I and in 28 patients (30.4%) in group II. All were statistically significant between the studied groups as shown in Table (2). Upper endoscopic findings in the studied groups shows that GERD grade (A) was the commonest in all cases (68%) and was more prevalent in group II (76%), non of group II recorded grades CorD, gastritis was found in 124/200 (62%) patients of the studied groups 72 (72%) patients and 52 (52%) patients in group I and II respectively, barette esophagus was found in 8 (8%) patients all in group I as shown in Table (3). Of the 200 GERD patients group I: 100 (50%) patients were having symptoms of LPR While group II: 100 (50%) patients did not have symptoms of LPR of them 8 (8%) were diagnosed to have silent LPR by laryngoscope as shown in Table (4). There were a predominance of laryngoscopic findings in males over females as shown in Fig. (1).

Table (1): Demographic features of the studied groups.

Demographic parameter	Group I Manifest LPR (n=100)	Group II GERD without LPR symptoms (n=100)	Total (n=200)	<i>P</i> -value
<i>Age:</i>				
Mean $\pm$ SD	40.4 $\pm$ 12.9	39.8 $\pm$ 10.7	40.1 $\pm$ 11.8	0.720
<i>Sex:</i>				
Female no (%)	52 (52%)	48 (48%)	100 (50%)	0.571
Male no (%)	48 (48%)	52 (52%)	100 (50%)	
<i>Residence:</i>				
Urban	60 (60%)	56 (56%)	116 (58%)	0.566
Rural	40 (40%)	44 (44%)	84 (42%)	
<i>BMI:</i>				
Mean $\pm$ SD	32.9 $\pm$ 5.6	31.6 $\pm$ 5.5	31.8 $\pm$ 5.55	0.099
Absolute figure				
>25	80 (80%)	68 (68%)	148 (74%)	0.053
<25	20 (20%)	32 (32%)	52 (26%)	

Table (2): Gastrointestinal symptoms of the studied groups.

Gastrointestinal symptoms	Group I Manifest LPR (n=100)	Group II GERD without LPR symptoms (n=100)			Total (n=200)	P-value (I vs. II)
		A= LPR-Free (n=92)	B= Silent LPR (n=8)	Total (n=100)		
Heart burn	80 (80%)	68 (73.9%)	4 (50%)	72 (72%)	38 (76%)	0.185
Regurgitation	80 (80%)	68 (73.9%)	4 (50%)	72 (72%)	38 (76%)	0.185
Halitosis	60 (60%)	24 (26.1%)	0 (0%)	24 (24%)	21 (42%)	<0.001
Dysphagia	56 (56%)	8 (8.7%)	4 (50%)	12 (12%)	17 (34%)	<0.001
Nausea	48 (48%)	20 (21.7%)	0 (0%)	20 (20%)	17 (34%)	<0.001
Appetite change	44 (44%)	28 (30.4%)	0 (0%)	28 (28%)	18 (36%)	0.018
Vomiting	36 (36%)	24 (26.1%)	0 (0%)	24 (24%)	15 (30%)	0.064
Haematemesis	8 (8%)	8 (8.7%)	0 (0%)	8 (8%)	4 (8%)	1.000

Table (3): Gastroscopic examination of the studied groups.

Gastroscopic findings	Group I Manifest LPR (n=100)	Group II GERD without LPR symptoms (n=25)			Total (n=200)	P value (I vs. II)
		A= LPR-Free (n=92)	B= Silent LPR (n=8)	Total (n=100)		
<i>Esophagus:</i>						
<i>GERD:</i>						
A	60 (60%)	72 (78.3%)	4 (50%)	76 (76%)	136 (68%)	0.004
B	32 (32%)	20 (21.7%)	4 (50%)	24 (24%)	56 (28%)	
C & D	8 (8%)	0 (0%)	0 (0%)	0 (0%)	8 (4%)	
Sliding hiatus hernia	24 (24%)	16 (17.3%)	4 (50%)	20 (20%)	44 (22%)	0.494
Barrett's esophagus	8 (8%)	0 (0%)	0 (0%)	0 (0%)	8 (4%)	0.003
<i>Stomach:</i>						
Gastritis	72 (72%)	44 (47.8%)	8 (100%)	52 (52%)	124 (62%)	0.003
<i>Duodenum:</i>						
Duodenitis	36 (36%)	28 (30.4%)	8 (100%)	36 (36%)	72 (36%)	1.000
Chronic active duodenal. U	8 (8%)	4 (4.3%)	0 (0%)	4 (4%)	12 (6%)	0.233

Table (4): Laryngoscopic examination of the studied groups.

Laryngoscopic LPR signs	Group I Manifest LPR (n=100)	Group II GERD without LPR			Total (n=200)	P-value (I vs. II)
		A= LPR-Free (n=92)	B= Silent LPR (n=8)	Total (n=100)		
Vocal fold edema	92 (92%)	0 (0%)	8 (100%)	8 (8%)	100 (50%)	<0.001
Diffuse laryngeal edema	84 (84%)	0 (0%)	8 (100%)	8 (8%)	92 (46%)	<0.001
Erythema/Hyperemia	80 (80%)	0 (0%)	8 (100%)	8 (8%)	88 (44%)	<0.001
Posterior commissure hypertrophy	76 (76%)	0 (0%)	4 (50%)	4 (4%)	80 (40%)	<0.001
Thick endolaryngeal mucus	52 (52%)	0 (0%)	4 (50%)	4 (4%)	56 (28%)	<0.001
Granuloma	32 (32%)	0 (0%)	0 (0%)	0 (0%)	32 (16%)	<0.001
Pseudosulcus	24 (24%)	0 (0%)	0 (0%)	0 (0%)	24 (12%)	<0.001
Ventricular obliteration	20 (20%)	0 (0%)	4 (50%)	4 (4%)	24 (12%)	0.001
RFS (mean)	8.44	0	7	0.56	-	0.000

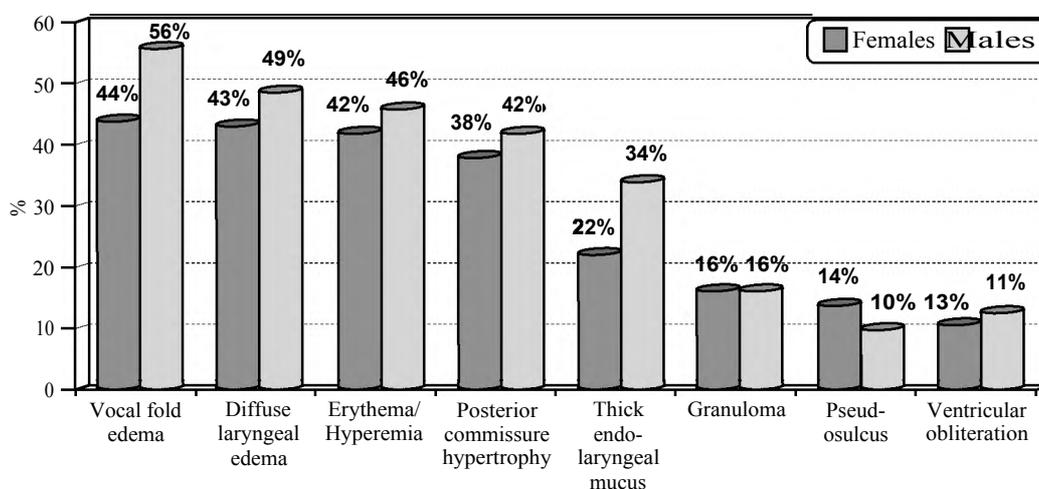


Fig. (1): Relation between gender in the studied patients and signs.

### Discussion

The present study was done to evaluate the prevalence of laryngopharyngeal reflux in cases of gastroesophageal reflux disease included 200 patients diagnosed endoscopically to have GERD who were later classified according to LPR symptoms into: group I=100 patients with manifest LPR and group II=100 patients further subdivided into IIA=LPR-free patients and IIB=Silent LPR.

Neither sex nor age predilection was recorded in GERD. This is similar to Sandler and Everhart [8] and Kahrilas et al., [9]. It was detected in all range of age of the studied patients which matches with Kahrilas [10] and Merrouche et al., [11] who stated that GERD occurs in all age groups. But not matched with Johnson and Fennerty [1] who had suggested an association between advancing age and fewer reflux symptoms but the presence of more severe esophagitis.

That was also similar regarding LPR. Amirlak et al., [12] stated that there is no sex predilection in LPR. However, Koufman [7] mentioned that LPR was present more in females aged 57 years old. In the current study, 148 patients (74%) were obese (mean BMI=31.8) which confirms the role of obesity as a predisposing factor of GERD. This matches with Hampel et al., [13] who ascertained the role of obesity control in the correction of reflux. Regarding LPR, obesity was higher in group I than in group II (80 patients; 80%, mean BMI=32.9 and 68 patients; 68%, mean BMI=31.6 respectively). This agrees with Cooper et al., [14] who confirmed the role of obesity as an aggravating factor in GERD resulting in LPR. Heart burn and regurgitation were similarly the commonest symptoms complained by GERD cases (152 patients;

76%). This matches with Johnson and Fennerty [1] who stated that they present in about 70-80% of cases of GERD. Regarding LPR, they were higher in group I than in group II (80 patients; 80% and 72 patients; 72% respectively,  $p=0.185$ ).

Dysphagia was reported in approximately half cases of group I (56 patients; 56%). This is similar to Chejtec [15]. Regarding LPR, it was significantly higher in group I than in group II (56 patients 56% and 12 patients 12% respectively,  $p=0.01$ ). This agrees with Amirlak et al., [12] who concluded that LPR can lead to inflammation, edema, which can cause dysphagia with or without globus sensation.

Sliding hiatus hernia presented in 44 patients of all GERD cases (22%). This ascertains the role of sliding hiatus hernia as a contributing factor in GERD. Van Herwaarden et al., [16] proved that patients with hiatus hernia had greater esophageal acid exposure and more reflux episodes than those without (7.6% vs. 3.3%;  $p<0.01$ , and 3.1 vs. 1.8/h;  $p<0.001$  respectively). It was comparably detected in both groups (24 and 20 patients in groups I and II respectively) which matches with Kahrilas et al., [17] who ascertained that hiatus hernias may worsen the existing reflux and its symptoms in a minority of individuals resulting in LPR.

The commonest laryngoscopic findings were vocal fold and laryngeal oedema and erythema, all higher in group I than in group II (92%, 84% and 80% versus 8%, 8% and 8% respectively). Meanwhile, 8 patients in group II (subgroup IIB), had these three laryngoscopic findings, therefore, they are defined as Silent LPR. This agrees with Remacle et al., [18] who mentioned that nonspecific signs of laryngeal irritation and inflammation are usually seen, but several findings are highly suggestive of

LPR. Also, Reavis et al., [19] stated that LPR causes numerous chronic laryngeal disorders such as contact granuloma and ulcers, chronic laryngitis, subglottic stenosis, vocal polyps, laryngeal spasms, dysphonia and in the worst case scenario, laryngeal cancer. However, laryngoscopic signs are not pathognomonic, thickening, and, redness, and edema are common finding.

Whereas, the least prevalent signs was ventricular obliteration in both groups (20% and 4% in groups I and II respectively). This is lower than that recorded by Koufman [20] i.e. 30% of LPR cases. The advantage of this study is that it evaluated the prevalence of LPR in cases of GERD which was limited in the literature.

#### Conclusion:

From this study it was concluded that Manifest LPR in GERD patients constituted 50%, complaining primarily from postnasal drip and throat clearing i.e. 96% each, while vocal fold and laryngeal edema and erythema were the most obvious signs i.e. 92%, 84%, and 80% respectively. Silent LPR constituted 4% with GERD not complaining of any LPR symptoms. There is a significant direct proportional relationship between severity of GERD and both, the RSI and RFS.

#### References

- 1- JOHNSON D. and FENNERTY M.: "Heartburn severity underestimates erosive esophagitis severity in elderly patients with gastroesophageal reflux disease". *Gastroenterology*, 126: 660-664, 2004.
- 2- EL-SERAG H.: "Time trends of gastroesophageal reflux disease: A systematic review". *Clin. Gastroenterol. Hepatol.*, 5 (1): 17-26, 2007.
- 3- DeVAULT K. and CASTELL D.: "Updated guidelines for the diagnosis and treatment of gastroesophageal reflux disease". *Am. J. Gastroenterol.*, 100 (1): 190-200, 2005.
- 4- BUTTAR N. and FALK G.: "Pathogenesis of gastroesophageal reflux and Barrett's esophagus". *Mayo. Clin. Proc.*, 76 (2): 226-34, 2001.
- 5- TASKER A., DETTMAR P., PANETTI M., et al.: "Is gastric reflux a cause of otitis media with effusion in children?" *Laryngoscope*, 112: 1930-1934, 2002.
- 6- FORD C.: "Evaluation and management of laryngopharyngeal reflux". *JAMA*, 294 (12): 1534-40, 2005.
- 7- KOUFMAN J., BELAFSKY P., BACH K., et al.: "Prevalence of esophagitis in patients with pH-documented laryngopharyngeal reflux". *Laryngoscope*, 112: 1606-1609, 2002.
- 8- SANDLER R. and EVERHART S.: "The burden of selected digestive disease". *Gastroenterology*, 122: 1500-1511, 2002.
- 9- KAHRILAS P.J., SHAHEEN N.J. and VAEZI M.F.: American Gastroenterological Association Medical Position Statement on the management of gastroesophageal reflux disease. *Gastroenterology*, 135 (4): 1383-91, 2012.
- 10- KAHRILAS P.: "Gerd pathogenesis, pathophysiology and clinical manifestations". *Cleve. Clin. J. Med.*, 70 (5): s4-19, 2003.
- 11- MERROUCHE M., SABATÉ J., JOUET P., et al.: "Gastroesophageal reflux and esophageal motility disorders in morbidly obese patients before and after bariatric surgery". *Obes. Surg.*, 17 (7): 894-900, 2007.
- 12- AMIRLAK B., MUDD P.A. and SHAKER R.: Reflux Laryngitis. *Am. J. Med.*, 29: 20-30, 2010.
- 13- HAMPEL H., ABRAHAM N. and EL-SERAG H.: "Meta-analysis: obesity and the risk for gastroesophageal reflux disease and its complications". *Ann. Intern. Med.*, 143: 199-211, 2005.
- 14- COPPER M.P., SMIT C.F., STANOJCIC L.D., et al.: High incidence of laryngopharyngeal reflux in patients with head and neck cancer. *The Laryngoscope*, 110 (6): 1007-11, 2010.
- 15- CHEJTEC G.: "Gastroesophageal reflux disease". *US Gastroenterol.*, 1: 84-87, 2007.
- 16- VAN HERWAARDEN M.A., et al.: "Excess gastroesophageal reflux in patients with hiatus hernia is caused by mechanisms other than transient LES relaxation". *Gastroenterology*, 119 (6): 1439-46, 2000.
- 17- KAHRILAS P., QUIGLEY E., CASTELL D., et al.: "The effects of tegaserod (HTF 919) on oesophageal acid exposure in gastro-oesophageal reflux disease". *Aliment. Pharmacol. Ther.*, 141503-1509, 2000.
- 18- REMACLE M., et al.: "Diagnosis and management of laryngopharyngeal reflux disease". *Curr. Opin. Otolaryngol. Head Neck Surg.*, 14 (3): 143-9, 2006.
- 19- REAVIS K., MORRIS C., GOPAL D., et al.: "Laryngopharyngeal reflux symptoms better predict the presence of esophageal adenocarcinoma than typical gastroesophageal reflux symptoms". *Ann. Surg.*, 239 (6): 849-856, 2004.
- 20- KOUFMAN J.A.: Laryngopharyngeal reflux is different from classic gastroesophageal reflux disease. *Ear, Nose & Throat Journal*, 81 (9): 7, 2011.

## التغيرات الحنجيرية فى المرضى المصريين المصابين بإرتجاع الحامض المعدى للمرى

الإرتجاع المعدى المريئى هو مرض مزمن فى الجهاز الهضمى، يحدث عندما يتدفق حمض المعدة، أو أحياناً الصفراء إلى المرى، وهذا التدفق العكسى يهيج الغشاء المخاطى للمرى، ويسبب علامات وأعراض إرتجاع المرى.

الأعراض النمطية للإرتجاع المعدى المريئى غير المصحوبة بمضاعفات هى حرقة المعدة، وإرتجاع وغثيان. وتشمل مضاعفات إوتجاع المرى قرح وضيق المرى، ومرى باريت، ويتم تشخيصها عن طريق منظار المعدة والمرى. بينما الإرتجاع الحنجرى البلعومى ينتج عنه أعراض مثل آلام الحلق، السعال، وحة فى الصوت، وإحساس بتكتلات بالحنجرة وقد لوحظ أن ١٠-٣٠٪ من المرضى يترددون على عيادات الأنف والأذن والحنجرة يعانون من هذا المرض.

الإرتجاع الحنجرى البلعومى يسبب العديد من اضطرابات الحنجرة المزمنة مثل الورم الحبيبي، وقرح بالحنجرة، وإلتهاب الحنجرة المزمن، وضيق تحت لسان المزمار، والأورام الحميدة بالأحبال الصوتية، وإنقباضات الحنجرة، وخلل النطق، وسرطان الحنجرة، ويتم تشخيصها عن طريق منظار الحنجرة.

والهدف من هذا العمل هو تقييم الإرتجاع الحنجرى البلعومى فى حالات إرتجاع المرى وإيجاد حالات الإرتجاع الحنجرى البلعومى الصامت بين حالات إرتجاع المرى.

وقد أجريت هذه الدراسة على ٢٠٠ مريض لإرتجاع المرى، وقد تمت دراسة الإرتجاع الحنجرى البلعومى عن طريق تطبيق مؤشر علامات الإرتجاع كما تم تصميمها من قبل بلافسكى وآخرون عام ٢٠٠٢.

وكان مائة مريض لديهم أعراض وعلامات الإرتجاع الحنجرى البلعومى الإيجابية، وبالتالي يعرف بأنه (الإرتجاع الحنجرى البلعومى الواضح) (المجموعة الأولى)، والمائة مريض الآخرون كانوا يعانون من إرتجاع المرى دون أعراض الإرتجاع الحنجرى البلعومى (المجموعة الثانية)، والتي تنقسم بدورها إلى مجموعتين فرعيتين: (II أ) الخالية من الإرتجاع الحنجرى البلعومى و (II ب): الإرتجاع الحنجرى البلعومى الصامت.

وكان معدل حدوث الإرتجاع المعدى المريئى فى هذه الدراسة ٧٦٪ بين المترددين على وحدة منظار المعدة، وكانت شكاوهم الأساسية هى حرقة المعدة، وإرتجاع ٧٦٪ لكل منهم، ولا علاقة للإرتجاع المعدى المريئى بجنس أو عمر أو السمنة المرضى الخاضعين للدراسة. وبعد فحصهم بمنظار المعدة والمرى كان الإرتجاع المعدى المريئى من الدرجة أ هو الأكثر إنتشاراً.

وتبين وجود الإرتجاع الحنجرى البلعومى الواضح فى ٨٠٪ من مرضى إرتجاع المرى. وهذا الإرتجاع لا يتعلق إلى حد كبير بالجنس أو السن. وبعد فحصهم بمنظار المعدة والمرى كان الإرتجاع المعدى المريئى من الدرجة أ هو الأكثر إنتشاراً. فى حين الدرجات ب، ج، د (المعتدل والشديد) كانت أكثر فى هذه المجموعة من مجموعة إرتجاع المرى دون أعراض الإرتجاع الحنجرى البلعومى، وتبين وجود مرى باريت فى ٨٪ من المرضى فى هذه المجموعة.

أشتكى المرضى الذين يعانون الإرتجاع الحنجرى البلعومى الواضح فى المقام الأول من تسهيل أنفى خلفى (٧٦٪) وتصفية الحلق بنسبة ٥٢٪، بينما كانت أبرز علامات منظار الحنجرة هى تورم الأحبال الصوتية وتورم الحنجرة، وإحمرار وكانت نسبتهم ٩٢٪ و ٨٤٪ و ٨٠٪ على التوالى. وفى الوقت نفسه، كانت أعراض الإرتجاع المعدى المريئى بشكل رئيسى هى حرقة المعدة والإرتجاع ٨٠٪ لكل منها، ورائحة الفم الكريهة فى ٦٠٪ وعسر البلع فى ٥٦٪.

من بين مجموعة إرتجاع المرى دون أعراض الإرتجاع الحنجرى البلعومى، كان يوجد ٨٪ بهم تورم وإحمرار بالأحبال الصوتية والحنجرة، بينما إنغلاق بطين الحنجرة، وتضخم الصوار الخلفى، وإفرازات المخاط السميك داخل الحنجرة كانت فى أربع حالات.

وقد لوحظ أن شدة الإرتجاع المعدى المريئى كانت متناسبة إلى حد كبير مع كل من مؤشر علامات الإرتجاع ومؤشر أعراض الإرتجاع.

وقد لوحظ أن كل حالات الإرتجاع الحنجرى البلعومى الواضح لديهم علامات الإرتجاع الحنجرى البلعومى إيجابية، بينما نعظم حالات إرتجاع المرى دون أعراض الإرتجاع الحنجرى البلعومى (٩٢٪) كانت لا توجد علامات الإرتجاع الحنجرى البلعومى، وهذا تم تأكيده عن طريق التوصل إلى أن مؤشر أعراض الإرتجاع مؤشراً فعالاً لتوقع مؤشر علامات الإرتجاع.