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Original Research

Cases of GERD in patients suffering from Idiopathic Pulmonary Fibrosis - A clinical study

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ABSTRACT

Background: Idiopathic pulmonary fibrosis (IPF) is a chronic and progressive interstitial disease characterized by the histological pattern of usual interstitial pneumonia. There is evidence of high prevalence of up to 90% of classic gastroesophageal reflux disease (GERD) in IPF in a number of studies. The present study was conducted to study the cases of GERD in patients suffering from IPF.

Materials & Methods: The present study was conducted in the department of chest & TB. It consists of 24 cases of IPF. Patients were submitted to pulmonary function tests, and the values of FVC, FEV1, the FEV1/FVC ratio, TLC and corrected DLCO were analyzed. Patients completed a general questionnaire on respiratory and digestive symptoms, as well as the Quality of Life Scale for Gastroesophageal Reflux Disease (GERD-QoL). pH metry was performed in all patients.

Results: Out of 24 patients, males were 14 and females were 10. The difference was non- significant (P-0.1). Out of 24 patients, 10 (41.7%) had GERD. Common symptoms in GERD + patients were heartburn (7), regurgitation (2), epigastic pain (6), dysphagia (3), cough (5) and chest pain (8) and in GERD- patients, heartburn (3), regurgitation (2), epigastic pain (1), dysphagia (2), cough (1) and chest pain (1). The difference was significant ($P< 0.05$).

Conclusion: The prevalence of GERD was higher in patients with IPF. Reflux was more impaired due to esophageal hypomotility, which was more common is these patients.

INTRODUCTION

Idiopathic pulmonary fibrosis (IPF) is a chronic and progressive interstitial disease characterized by the histological pattern of usual interstitial pneumonia. It is estimated that the annual incidence of IPF is approximately 10.7 cases per 1 lacs men and 7.4 cases per 1 lacs women, with a prevalence of up to 20.2%.[1] Idiopathic interstitial pneumonias- IPF and idiopathic non-specific fibrotic interstitial pneumonias are diseases of unknown association. These diseases cause progressive dyspnea with eventual oxygen dependence. In both disorders the lung seems to be the only organ affected. A high prevalence of gastroesophageal reflux disease (GERD) in patients with IPF has been documented in a

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number of studies.[2]

There is evidence of high prevalence of up to 90% of classic gastroesophageal reflux disease (GERD) in IPF in a number of studies. Moreover, patients with scleroderma-associated lung fibrosis have significantly increased reflux episodes as compared with scleroderma patients without pulmonary fibrosis.[3]

Interest in the association between IPF and GER was renewed after one group of authors reported that the prevalence of GER disease (GERD), frequently asymptomatic, in patients with IPF and in patients with interstitial lung disease other than IPF (control group), all of whom were submitted to 24-h pH-metry, was 94% and 50%, respectively. Subsequently studies also suggested the existence of this association.[4] The present study was conducted to study the cases of GERD in patients suffering from IPF.

Materials & Methods

The present study was conducted in the department of chest & TB. It consists of 24 cases of IPF of both genders. All were informed regarding the study and written consent was obtained.

The diagnosis was based on the ATS/ERS criteria for a diagnosis of IPF in the absence of open lung biopsy, exclusion of other known causes for interstitial lung disease; abnormal pulmonary function testing results, HRCT findings of bibasilar reticular abnormalities with minimal ground-glass opacities; and a clinical history consistent with the diagnosis.

Patients were submitted to pulmonary function tests, and the values of FVC, FEV_1, the FEV_1/FVC ratio, TLC and corrected DLCO were analyzed. Patients completed a general questionnaire on respiratory and digestive symptoms, as well as the Quality of Life Scale for Gastroesophageal Reflux Disease (GERD-QoL). The GERD-QoL comprises 11 questions, and points from 0 to 5 are used in order to respond to 10 of these questions as follows: 0, no symptoms; 1, symptoms that do not affect the daily routine; and so on, progressively, up to 5, which indicates constant symptoms that affect activities of daily living. The last question, also rated from 0 to 5, refers to patient satisfaction with the present situation. Therefore, the maximum score is 55. pH metry was performed in all patients. Results were subjected to statistics. P vale <0.05 was considered significant.

Results

Table I Distribution of patients

1.1.1. Total- 24 *1.1.2.*		
1.1.3. Males	*1.1.4. Females* *1.1.5.*	*1.1.6. P value*
1.1.7. 14	*1.1.8. 10* *1.1.9.*	*1.1.10. 0.1*

Table I shows that out of 24 patients, males were 14 and females were 10. The difference was non-significant (P- 0.1).

Table II Prevalence of GERD in IPF patients

1.1.11. ***IPF patients***	*1.1.12.* ***GERD***	***1.1.13. %***
1.1.14. 24	*1.1.15. 10*	*1.1.16. 41.7%*

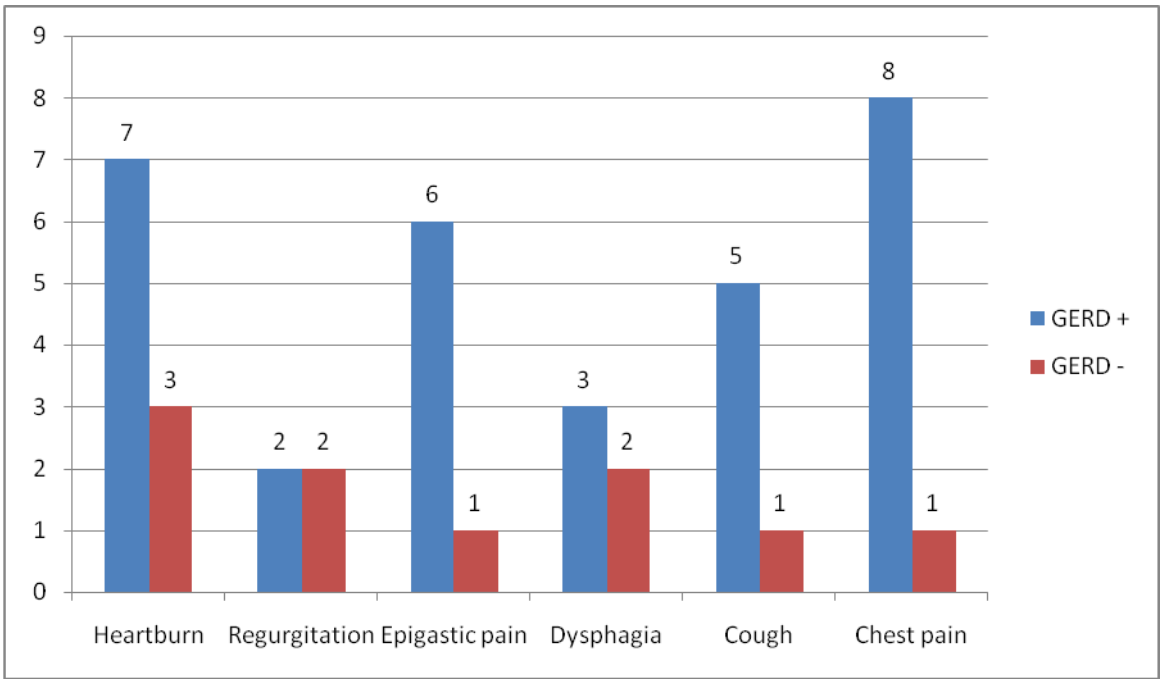
Table II shows that out of 24 patients, 10 (41.7%) had GERD.

Graph I shows that common symptoms in GERD + patients were heartburn (7), regurgitation (2), epigastic pain (6), dysphagia (3), cough (5) and chest pain (8) and in GERD- patients, heartburn (3), regurgitation (2), epigastic pain (1), dysphagia (2), cough (1) and chest pain (1). The difference was significant ($P< 0.05$).

Discussion

The prevalence of GERD has been shown to be high, according to population-based studies, ranging from 10% to 20% in western countries and reaching 5% in eastern countries. Approximately 18% of healthy individuals in the United States have heartburn at least once a

Graph I Symptoms in patients



week. The gold standard for the diagnosis of GERD is pH-metry, which has sensitivity and specificity of 96.0%. A diagnosis of IPF can be safely established by the finding of a usual interstitial pneumonia pattern in the anatomopathological examination of material obtained through open lung biopsy.[5]

In present study, out of 24 patients, males were 14 and females were 10. We found that out of 24 patients, 10 (41.7%) had GERD. This is in agreement with Verma et al.[6] Cristaine et al[7] in their study, 28 consecutive patients with IPF underwent stationary esophageal manometry, 24-h esophageal pH-metry and pulmonary function tests. All patients also completed a symptom and quality of life in GERD questionnaire. In the study sample, the prevalence of GERD was 35.7%. The patients were then divided into two groups: GERD+ and GERD−. In the GERD+ group, 77.7% of the patients presented at least one typical GERD symptom. The pH-metry results showed that 8 (80%) of the GERD+ group patients had abnormal supine reflux, and that the reflux was exclusively in the supine position in 50%. In the GERD+ and GERD− groups, respectively, 5 (50.0%) and 7 (38.8%) of the patients presented a hypotensive lower esophageal sphincter, 7 (70.0%) and 10 (55.5%), respectively, presenting lower esophageal dysmotility. There were no significant differences between the groups regarding

demographic characteristics, pulmonary function, clinical presentation or manometric findings.

In a study by Raghu et al[8], The Hull airway reflux questionnaire (HARQ) was completed by 40 patients with IPF and 50 controls in order to evaluate reflux symptoms. EBC was collected from 23 patients for measurement of pepsin by the lateral flow technique. A prospective study of 57 subjects for H. pylori antibody detection by ELISA was performed. Significantly higher HARQ scores were recorded in patients with IPF compared with controls. There was no significant difference in EBC pepsin positivity between patients with IPF and controls. There was no significant difference in H. pylori serology between patients with IPF and controls.

We found that common symptoms in patients were heartburn, regurgitation, epigastic pain, dysphagia, cough and chest pain. In a recent case report of 4 patients with IPF treated exclusively with antireflux therapy, pulmonary function test results stabilized or improved after the patients received the appropriate treatment for GERD and none of them presented exacerbations during the follow-up period.[9] In nocturnal reflux, the gastric content that refluxes is cleared more slowly by the distal esophagus, since there is no contribution of the force of gravity, as well as since swallowing is less frequent and saliva production is low. In addition, the basal tone of the UES and the defensive cough reflex are reduced, making it possible for the gastric acid to reflux freely, which suggests that based on the combination of these factors, GER is a possible pathophysiological mechanism for the onset of pulmonary fibrosis.

Conclusion

The prevalence of GERD was higher in patients with IPF. Reflux was more impaired due to esophageal hypomotility, which was more common is these patients.

References

1. Johnson LF, DeMeester TR. Development of the 24-hour intraesophageal pH monitoring composite scoring system. J Clin Gastroenterol 1986; 1:52-8.
2. de Barros SG. Gastroesophageal reflux disease--prevalence, risk factors and challenges. Gastroenterol 2005;42(2):71.
3. Aguero GC, Lemme EM, Alvariz A, Carvalho BB, Schechter RB, Abrahão L Jr. Prevalence of supraesophageal manifestations in patients with gastroesophageal erosive and non-erosive reflux disease Arq Gastroenterol 2007;44(1):39-43.

4. Moraes-Filho JP, Chinzon D, Eisig JN, Hashimoto CL, Zaterka S. Prevalence of heartburn and gastroesophageal reflux disease in the urban Brazilian population. Arq Gastroenterol. 2005; 42(2):122-7.
5. Nader F, da Costa JS, Nader GA, Motta GL. Prevalence of heartburn in Pelotas, RS, Brasil: population-based study. Arq Gastroenterol. 2003;40(1):31-4.
6. Verma S, Slutsky AS. Idiopathic pulmonary fibrosis--new insights. N Engl J Med. 2007; 356(13):1370-2.
7. Christaine, Pope CE 2nd, Pellegrini CA, Emond MJ, Sillery J, Raghu G. Increased prevalence of gastroesophageal reflux in patients with idiopathic pulmonary fibrosis. Am J Respir Crit Care Med. 1998; 158(6):1804-8.
8. Raghu G, Freudenberger TD, Yang S, Curtis JR, Spada C, Hayes J, et al. High prevalence of abnormal acid gastro-oesophageal reflux in idiopathic pulmonary fibrosis. Eur Respir J. 2006;27(1):136-42.
9. Kennedy JH. "Silent" Gastroesophageal Reflux: An Important but Little Known Cause of Pulmonary Complications. Dis Chest. 1962;42(1):42-5.