ejpmr, 2020,7(1), 397-400

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

INTERSTITIAL LUNG DISEASE- CLINICAL FEATURES AND DIFFERENTIAL DIAGNOSIS AT TERTIARY CARE CENTRE UJJAIN

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Article Received on 11/11/2019 **Article Revised on 02/12/2019** **Article Accepted on 23/12/2019**

ABSTRACT

Introduction: Out of more than 200 distinct entities of ILDs, a limited number of disorders, including idiopathic pulmonary fibrosis, sarcoidosis, and connective tissue disease-related ILDs, account for majority of ILDs. The present study was undertaken at a tertiary care centre to assess the pattern in spirometry and differential diagnosis of ILD. **Methodology:** This cross sectional study was done at a tertiary care centre, Ujjain over a period of one year on 25 cases of ILD diagnosed by HRCT. A detailed history along with occupational history was obtained from all the patients. All patients were examined clinically and underwent relevant investigations to reach a diagnosis. This was followed by assessment of pulmonary functions by spirometry. Findings thus obtained were recorded in questionnaire. Data was compiled using Ms Excel and analysed using SPSS Version 20. **Results:** The study was conducted on 25 diagnosed cases of Interstitial lung disease based on HRCT. Mean age of all patients were 53.68 year. Most common compliant was shortness of breath was present in all 100% patients whereas a cough was present in 24 (94%) cases. Most of the subjects had restriction PFT Pattern i.e 10(40%). IPF was seen in most of the subjects i.e 18(72.0%). **Conclusion:** Interstitial lung diseases are observed in India. They present with non specific symptoms such as dyspnea and cough thus they require careful history taking and relevant investigations to reach to a definitive diagnosis. The most common diagnosis was IPF and maximum cases may be misdiagnosed as TB.

KEYWORDS: Spirometry, IPF, ILD, clinical features.

INTRODUCTION

Interstitial lung disease (ILD) is a heterogeneous group of disorders that are characterized by varying degrees of fibrosis and inflammation of lung parenchyma leading to restrictive pathology and common clinical, radiological, physiological and pathological manifestations.[1] Interstitial lung diseases are caused by variety of different disorders. Out of more than 200 distinct entities of ILDs, a limited number of disorders, including idiopathic pulmonary fibrosis, sarcoidosis, and connective tissue disease-related ILDs, account for majority of ILDs.[2] Idiopathic pulmonary fibrosis is the most common interstitial lung disease in adults and generally has a poor prognosis.[3] Symptomatology of ILD depend upon underlying disorders. Patients often present with progressive shortness of breath, exercise intolerance and a pervasive dry cough. On chest auscultation, fine crepts may be appreciated. Also signs of pulmonary hypertension and right heart failure may present, particularly in cases presenting with advanced stage.[4,5]

The natural history of interstitial lung diseases is characterized by slow and progressive destruction of alveolar-capillary functional units, often with respiratory failure and death. For their smoldering evolution and non-specificity of symptoms (exertional dyspnea and cough), they may remain undiagnosed and not treated for a long time.[6] Most of the ILD cases are misdiagnosed as pulmonary tuberculosis and they have already received ATT in the past. Many of the cases are still under diagnosed. Thus a proper detailed history and clinical examination with help of conventional chest x-ray followed by HRCT and other investigations help in early and accurate diagnosis of underlying entity in case of ILD. The present study was undertaken at a tertiary care centre to assess the pattern and differential diagnosis of ILD.

OBJECTIVE

1. To study the pattern in spirometry in interstitial lung disease.
2. To study the differential diagnosis of ILD.

METHODOLOGY

The present study was conducted as a cross sectional study in Department of Pulmonary Medicine, tertiary care centre, Ujjain over a period of one year i.e. from 1st February 2017 to 31st January 2018. The study included 25 cases of ILD diagnosed by HRCT and Chest Xray. Patients not giving consent, pregnant females, known cases of obstructive lung disease, lung cancer and pleural disease were excluded from the study. After obtaining ethical clearance from Institute Ethical Committee, consent from all the patients was obtained A detailed history along with occupational history was obtained from all the patients and entered in a questionnaire. All patients were examined clinically and underwent relevant investigations to reach a diagnosis. This was followed by assessment of pulmonary functions by spirometry. Findings thus obtained were recorded in questionnaire.

Statistical analysis

Data was compiled using Ms Excel and analysed using Statistical Package of Social Science (SPSS Version 20; Chicago Inc., USA). Data comparison was done by applying specific statistical tests to find out the statistical significance of the comparisons. Quantitative variables were compared using mean values and qualitative variables using proportions. P value <0.05 was considered significant whereas p value <0.01 was considered highly significant.

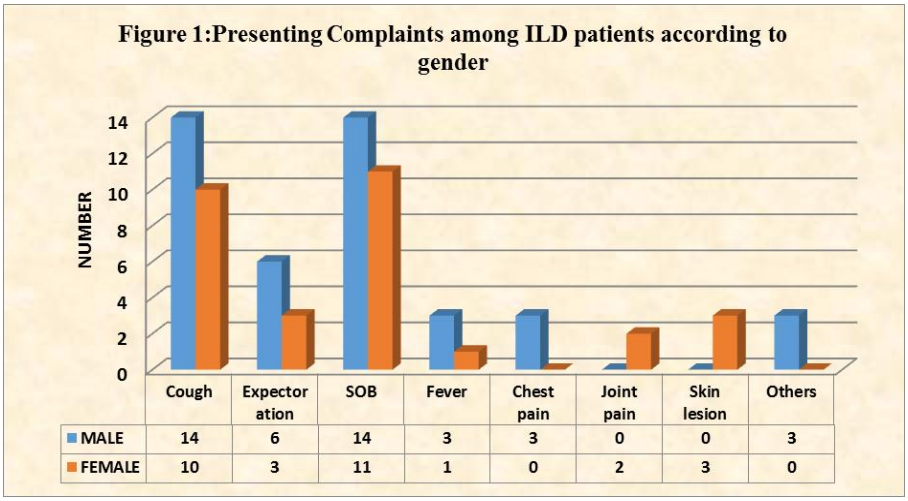
RESULTS

The study was conducted on 25 diagnosed cases of Interstitial lung disease based on HRCT.

Table 1: Demographic Distribution of Interstitial Lung Disease (Ild) Patients According To Age & Gender.

Age groups (Years)	Male N(%)	Female N(%)	Total N(%)
20-40 yr	2(8.0%)	1(4.0%)	3(12.0%)
41-60 yr	9(36.0%)	8(32.0%)	17(68.0%)
>60 yr	3(12.0%)	2(8.0%)	5(20.0%)
Total	14(56.0%)	11(44.0%)	25(100%)
Chi Square Value	0.236		
Significance ‘P Value	0.889(NS)		

Out of 25 patients, 14 (56%) were male & 11 (44%) were female. Most of the subjects were 41-60 year old i.e 68%. Mean age of all patients were 53.68 year. There was no statistically significant difference in the distribution of patients according to age & gender (P=0.889).



Shortness of breath was present in all 100% patients whereas a cough was present in 24 (94%) cases. Skin lesion was present only in 3(12%) females. Statistically significant difference was found between male & females only for skin lesion (P=0.04).

Table 2: PFT Pattern among Interstitial Lung Disease (ILD) Patient.

PFT Pattern	Male N(%)	Female N(%)	Total N(%)	Chi Square Value	Significance ‘P Value
Obstruction	5 (20.0%)	2 (8.0%)	7 (28.0%)	1.852	0.396 (NS)
Restriction	6 (24.0%)	4 (16.0%)	10 (40.0%)		
Mixed	3 (12.0%)	5 (20.0%)	8 (32.0%)		

Mean FEV1 & Mean FVC was 53.84±11.32 & 56.36±11.63 respectively. Most of the subjects had restriction PFT Pattern i.e 10(40%). Mixed pattern was seen in 8(32%) and obstruction pattern was seen in

7(28%) patients. There was no statistically significant difference in the PFT parameter according to gender.(P= 0.396).

Table 3: Differential Diagnosis Among Interstitial Lung Disease (Ild) Patients.

Diagnosis	Male N(%)	Female N(%)	Total N(%)	Chi Square Value	Significance 'P Value
COP	0 (0.0%)	1 (4.0%)	1 (4.0%)	**6.061**	**0.195 (NS)**
HP	1 (4.0%)	0 (0.0%)	1 (4.0%)		
IPF	12 (48.0%)	6 (24.0%)	18 (72.0%)		
NSIP	1 (4.0%)	2 (8.0%)	3 (12.0%)		
CTD	0 (0.0%)	2 (8.0%)	2 (8.0%)		

IPF was seen in most of the subjects i.e 18(72.0%). COP & HP was seen only in 1(4%) patients. NSIP was in 3(12%) patients. IPF was seen more in male as compared to female but There was no statistically significant difference in the diagnosis according to gender (P =0.195).

DISCUSSION

The present study was conducted on 25 diagnosed case of ILD to assess the PFT pattern and differential diagnosis. Our study observed ILD in 14(56%) male & 11(44%) female. Maximum patients (68%) belonged to 41-60 year of age. Mean age of all patients were 53.68 year. There was no statistically significant difference in the distribution of patients according to age & gender (P=0.889). These findings were supported by Mahashur et al in which out of 161 cases, 86 were male and 75 were female.[7] Similarly, Turner et al reported ILD in 66.8% male and 32.2% females.[8] The present study agrees with data from western literature in terms of age at presentation with disease typically occurring in 6th–7th decade of life.

The present study documented Dyspnoea in 100% cases which is suppoeted by findings of Mahasur et al[7] and Crystal et al[9]. Jindal et al[10] also observed dyspnea in 100% cases similar to present study. Joint pain was present in 8% cases that closely resemble Turner et al study (21%).[8] In Jindal et al study, more cases of joint pain was found which was due to more cases of collagen disease.[10]

In our study, most of the subjects had restriction PFT Pattern i.e 10 (40%). Mixed pattern was seen in 8(32%) and obstruction pattern was seen in 7(28%) patients. Majority of patients have FVC% of predicted between 30-59% in present study. In Mahashur et al study,[7] FVC% of predicted below 30% was found in 27% as compared to 53% in present study, which may be related to early diagnoses of interstitial lung diseases due to advancement in non-invasive investigation. of interstitial lung diseases.

The most common diagnosis was Idiopathic pulmonary fibrosis documented in 18(72.0%) patients followed by COP & HP in 1(4%) patients each. NSIP was in 3(12%) patients. The literature suggest that NSIP has a mean age of 52 years and is more common in females and never smokers[11] which is similar to our study. IPF was seen more in male as compared to female but There was no statistically significant difference in the diagnosis according to gender (P =0.195). The results were similar to another Indian study[12,13,14] and studies from western literature[15] in which IPF constituted the single largest disease group. IPF has been reported to occur throughout the world in many different racial and ethnic groups. Studies in the United States have suggested that Caucasians are more likely to be diagnosed with IPF and have higher mortality rates from IPF than African Americans.[16,17]

CONCLUSION

Interstitial lung diseases are observed in India. They present with non specific symptoms such as dyspnea and cough thus they require careful history taking and relevant investigations to reach to a definitive diagnosis. The most common diagnosis was IPF and maximum cases may be misdiagnosed as TB.

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