IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 3 Ver. II (Mar. 2016), PP 20-23
www.iosrjournals.org

A Profile on Interstitial Lung Diseases in Regional Institute of Medical Sciences: A Hospital Based Study

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Abstract: *Interstitial lung diseases (ILD) are a clinically challenging and diverse group of over 200 disorders characterized by varying degrees of fibrosis and inflammation of the lung parenchyma or interstitium. In this study, 27 patients diagnosed with ILD which was made from the history, clinical examinations, radiological findings (CXR, HRCT thorax), pulmonary function tests (PFT) and haematological examinations were studied from June, 2011 to April, 2014 in Respiratory Medicine Department, RIMS. Out of 27 patients, 14 were female and 13 were male. PFT showed restrictive pattern in 25 patients and mixed patterns in 2 patients. Maximum (70.37%) patients were above the age of 60 yrs(60-82). Sixteen (59.25%) patients were non smokers and 11(40.74%) patients were smokers. Eight (29.62%) patients were associated with autoimmune connective tissue disorders. Steroid (prednisolone) was given in all the patients as treatment. Non smoking female farmers from rural areas are more affected, of which half of them had underlying autoimmune diseases. Non invasive investigations such as HRCT thorax, pulmonary function tests and thorough history and clinical examinations are sufficient to diagnose interstitial lung disease. Most of the patients presented at an advanced stage thrfore, treatment did not alter the disease course satisfactorily.*

Keywords*: Autoimmune disease, fibrosis, interstitium, parenchyma, restrictive pattern.*

I. Introduction

The term *interstitial lung disease* implies inflammatory-fibrotic infiltration of the alveolar walls (interstitium) resulting in profound effects on the capillary endothelium and the alveolar epithelial lining cells producing a diverse group of over 200 disorders with similar clinical, radiographic, and physiologic features.
The exact prevalence and incidence of the interstitial lung diseases are unknown.
Studies suggest a prevalence of 80.9 per 100,000 for men compared to 67.2 per 100,000 for women. Similarly, the overall incidence of interstitial lung disease is slightly more common in men (31.5 per 100,000 per year) than women (26.1 per 100,000 per year) and increases with age.
Causes can be broadly divided into:

1.1 Clinical Classification:

- Connective Tissue Diseases, eg. Scleroderma, SLE
- Treatment-Related or Drug-Induced Diseases , eg.Chemotherapeutic agents (mitomycin C, bleomycin)
- Primary (Unclassified) Diseases, eg. Sarcoidosis
- Occupational and Environmental Diseases, eg. Silicosis, hypersensitivity pneumonitis.
- Idiopathic Fibrotic Disorders ,eg. Idiopathic pulmonary fibrosis
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1.2 Histologic Patterns

- Organizing pneumonia: Cryptogenic organizing pneumonia
- Desquamative interstitial pneumonia: Cigarette smoking
- Nonspecific interstitial pneumonitis: connective tissue diseases; drugs
- Usual interstitial pneumonia: Idiopathic pulmonary fibrosis
- Eosinophilic pneumonia: tropical filarial eosinophilia
- Diffuse alveolar damage: toxic gas inhalation; oxygen toxicity
- Alveolar proteinosis: Pulmonary alveolar proteinosis
- Lymphocytic interstitial pneumonia: autoimmune diseases

II. Aims And Objects

The aim and object of the study is to study the demographic and clinical profile ofpatients suffering from Interstitial lung disease attending the Department of Respiratory Medicine, RIMS, Imphal during the period of July 2012 to April 2014.

III. Methods And Materials

Twenty seven cases of ILD diagnosed from history, clinical examination, radiological findings (CXR, HRCT thorax), pulmonary function tests and haematological examinations were studied from July 2012 to April 2014 in Respiratory Medicine Department, RIMS, Imphal .

Exclusion criteria: Patients <12 years.

IV. Results

Table 1: Gender wise distribution

Variables	No. Of patients	Percentage %
Male	13	48
Female	14	52

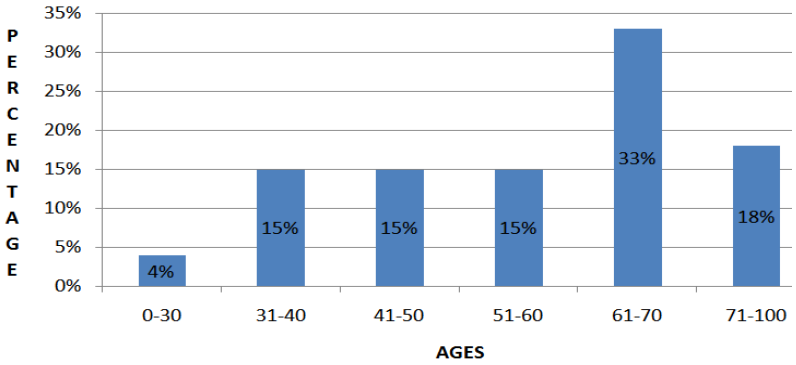

Fig1: Age wise distribution of patients

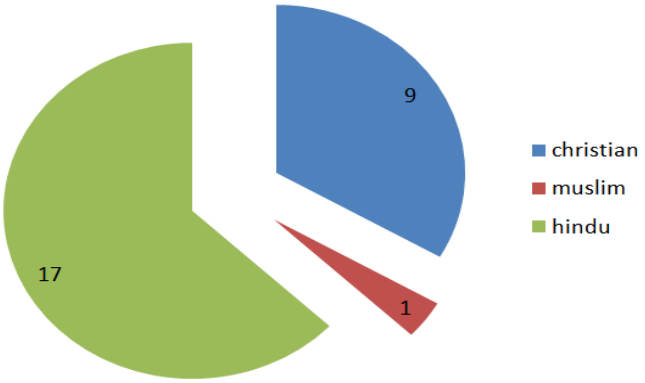

Fig2: Distribution of cases according to religion

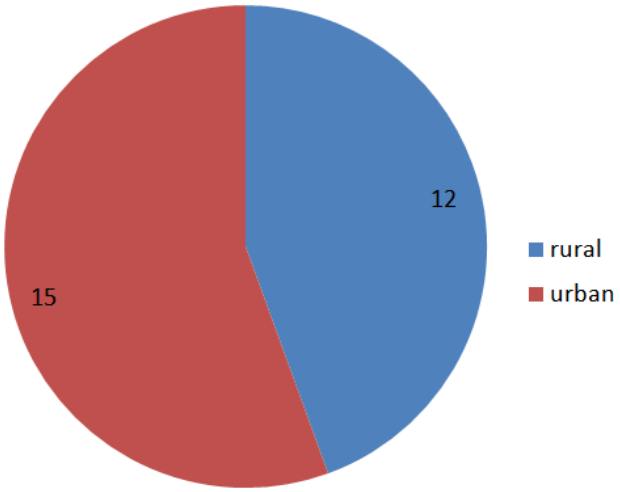

Fig3: Distribution of cases according to urban-rural area

Table2: Smoking status

Smoking status	Male	Female	Total	Percentage %
Smokers	10	1	11	40.74
Non smokers	3	13	16	59.26
Total	13	14	27	100

Table 3: Distribution of cases according to occupation

Occupation	Number of Patients	Male	Female
Farmer	11	3	8
Housewife	3	-	3
Ex servicemen	3	3	-
Business	3	3	-
Teacher	4	2	2
Government employee	3	3	-
Student	1	-	1

Details of some group of the occupation

- Ex servicemen: Infantry-3
- Business: Grocery shopkeeper- 1
  Contractors- 2
- Government employee: Electrician- 1
  Hospital attendant- 1
  Horticulturist-1

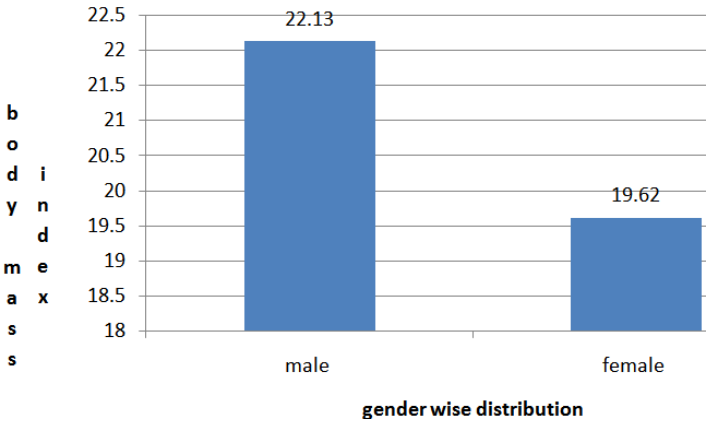

Fig 4: BMI in different gender

Table 4: Distribution of cases according to causes

Causes	Number of cases	Male	Female
Unknown	16	10	6
Rheumatoid arthritis	4	1	3
Scleroderma	3	2	1
Systemiclupuserythematosus	2	-	2
Hypersensitivity pneumonitis	1	-	1
Mixed CT disease	1	-	1

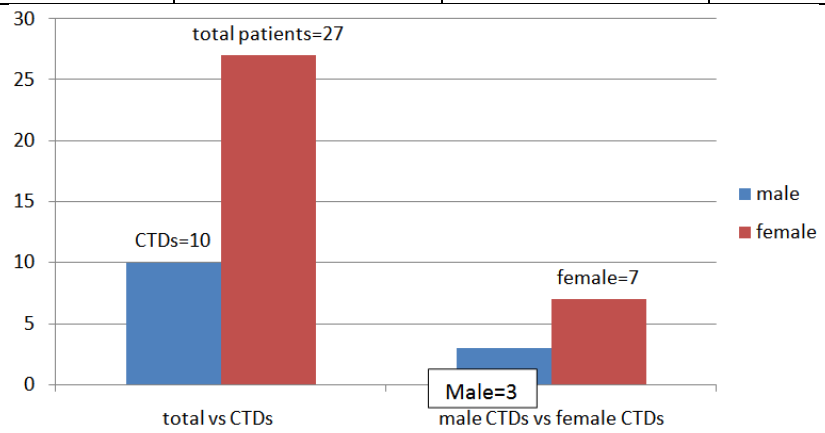

Fig5: Association between connective tissue diseases and ILD cases

Table5: Distribution of cases with systemic co- morbid conditions

Condition	Number of patients
Diabetes mellitus	1
Tuberculosis	1

Pulmonary Function Test Findings:

Restrictive pattern: 21
Mixed pattern: 6

Treament

Corticosteroid : Prednisolone, 0.5mg/kg body weight/day in all the patients.
Azathioprine : 2mg/kg/day in selected cases.
Oxygen therapy.

V. Discussion And Conclusion

In this study, females (52%) are more affected than males (48%) whereas a study by Coultas DB et al found that 80.9 per 100,000 for men and 67.2 per 100,000 for women were affected. This difference may be due to the less study population in the present study.Adult age group ranging from 61-70yrs are more affected as was in the study by Coultas DB et al where prevalence of ILD, especially IPF, increases with age above 70.
Majority of the cases belong to the Hindu religion and most of the cases are from rural area. This may be due to the fact that Manipur is a Hindu dominated state.More common in non smokers and also, most of the non smokers were females. Most common occupation was farmers.

The exact histological pattern or the histogical type of majority of the patients (n=16) was not ascertained as lung biopsy was not done. It was not possible to perform diagnostic biopsy on the patients as they presented to the hospital in a very morbid condition and autopsy was not done due to the refusal to do so by the patient's party. Pulmonary function tests showed restrictive pattern in 21 cases and 6 cases showed mixed pattern.Treatment included corticosteroids in the form of prednisolone 0.5 mg/kg/day for all the patients and azathioprine 2mg/kg/day for connective tissue diseases.

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