[Indian J Chest Dis Allied Sci 2013;55:197-199]

Editorial

The ILD India Registry: A Novel Tool for Epidemiological Surveillance of Interstitial Lung Disease in India

What is ILD?

Interstitial lung disease (ILD) is a heterogeneous group of disorders with more than 200 reported entities. It is characterised by acute or chronic diffuse involvement of pulmonary parenchyma leading to a variable degree of lung fibrosis.[1] Some clinicians prefer to use the term diffuse parenchymal lung disease (DPLD), as the disease process is not confined to interstitium of the lungs.

The ILD is classified into four clinically distinct groups: (1) ***ILD of known association*** (e.g., collagen vascular disease, hypersensitivity pneumonitis secondary to exposures), (2) ***granulomatous ILD*** (e.g., sarcoidosis), (3) ***other rare ILDs*** (e.g., lymphangioleiomyomatosis, pulmonary Langerhans cell histiocytosis), and (4) ***idiopathic diseases*** (idiopathic interstitial pneumonias [IIPs]). [1, 2]

The diagnosis of ILD is multidisciplinary and involves consideration of clinical, radiological, physiological and histopathological findings.

The most recent revision of the classification of IIPs divides these into three categories: (1) ***major IIPs*** (includes idiopathic pulmonary fibrosis [IPF]; idiopathic non-specific interstitial pneumonia [NSIP]; respiratory bronchiolitis-interstitial lung disease [RB-ILD]; desquamative interstitial pneumonia [DIP]; cryptogenic organising pneumonia [COP] and acute interstitial pneumonia [AIP]), (2) ***rare IIPs*** (includes idiopathic lymphoid interstitial pneumonia and idiopathic pleuroparenchymal fibroelastosis), and (3) ***unclassifiable IIPs.***[3]

IPF is a subtype of IIPs, occurring primarily in older adults, limited to the lungs, and associated with a histological pattern of usual interstitial pneumonia (UIP).[4] IPF is the most common and also the most sinister form of IIPs. It is irreversible and has an unpredictable and gradual downhill clinical course. It is often associated with extremely poor prognosis with a median survival of only one to three years.[4,5]

It is difficult to estimate the exact prevalence and incidence of all ILDs in any particular geographic region due to the heterogeneous nature of the disease, lack of awareness and under reporting.

Coultas *et al*[6] studied epidemiology of ILD from an ILD registry restricted to a single county of New Mexico in the United States. The annual prevalence of IPF was 20.2 per 100,000 population in males and 13.2 per 100,000 population in females. The annual incidence of IPF was 10.7 per 100,000 population in males and 7.4 per 100,000 population in females.[6]

Thomeer *et al*[7] compared the data from different ILD registries of Belgium, Italy and the United States.[10] The US prospective registry showed that 23% of cases with ILD were diagnosed with IPF[6]. The lowest proportion of IPF of 17% was reported from Belgium. Almost comparable results were reported from the Italian retrospective registry (19%). On the other hand, a prospective Italian registry reported a higher proportion of IPF of 37%.[7]

According to a recent review of 15 studies, the prevalence of IPF in the United States varies between 14 and 63 cases per 100,000 population using narrow and broad case definitions.[8] The annual incidence of IPF in the United States varies between 6.8 and 17.4 per 100,000 population using narrow and broad case definitions. With advent of better diagnostic facilities and improved overall life expectancy, it can be assumed that incidence of ILD will further increase.[9]

Demographic features of ILD also vary among different groups. Certain ILDs such as sarcoidosis, pulmonary Langerhans cell histiocytosis, and lung diseases secondary to collagen vascular disorders tend to develop in young adults. Age has been identified as a significant risk for the development of IPF.[9] Though IPF has been diagnosed in persons from teenage into their late eighties, it is usually observed between the ages of 40 and 70. In IPF, there is a gender predilection towards males. IPF is found equally in rural and urban environments. A history of smoking is present in about two-thirds of the patients with ILD. Metal and wood dusts are associated with an increased risk of development of IPF. Other possible risk factors include exposure to certain drugs and gastroesophageal reflux disease. Certain genetic factors have also been linked to the risk of development of IPF. [10]

Newer ILD registries at national levels are being set up that are likely to yield important data on the epidemiology of IPF after the current revision of the diagnostic criteria.[11,12]

ILD in India

The IPF was initially considered to be a rare disease in India. In 1979, Jindal *et al*[13] studied 61 cases of DPLD over a period of five years; and IPF was seen in 46% of the patients. In 2004, the same centre[14] reported their data of 76 patients with IPF observed

Correspondence and reprint requests: Dr Virendra Singh, C-93, Shyam Marg, Shastri Nagar, Jaipur-302 016, (Rajasthan), India; E-mail: drvirendrasingh@yahoo.com

over a period of 16-month showing that transbronchial lung biopsy was helpful in confirming the diagnosis in 92.1% of the patients. In 1984, Sharma *et al*[15] reported their series of 133 patients with DPLD; and IPF was present in 28.6% of the patients. In 2004, Subhash *et al*[16] published a series of 97 patients with DPLD; and IPF was present in 45% of the patients. In 2010, Sen *et al*[17] reported a series of 274 patients with biopsy proven ILD over a period of six years, probably the largest series from India so far, and IPF was found in 43% of cases. Thus, similar to the western world, among the different ILD patients, IPF is the major disease that has been reported in the Indian studies. However, these reports have represented single centres. In order to have data representing the national scenario, it is desirable to carry out multicentric studies.

ILD India Registry

Keeping above objectives in mind, a registry was started in India in 2011 under the aegis of Indian Chest Society. A network of most privileged clinical scientists interested in the field of ILD has been established.

The main aims of the registry are: (1) to evaluate the pattern and natural course of the disease in India, (2) to characterise the pattern of ILD, among residents of India and identify the phenotypes of IIPs / ILDs, (3) to identify associated causative factors and to suggest improved methods of prevention in high risk groups, and (4) to establish more advanced diagnostic and therapeutic strategies for ILDs.

The ILD India Registry is an electronic database of medical history, clinical examination, laboratory and radiological investigations of patients suffering from ILD. The contributing centres are required to obtain approval of the Institutional Ethics Committees.

A controlled trial registry of India (CTRI) number has already been allotted to the registry. The investigators are required to fill the online details of the patient after obtaining written informed consent. Site investigators are expected to send CT images and / or histopathology slides along with a copy of the biopsy report to the national coordinator. The national coordinator manages all the data in electronic format at the website: www.ildindiaregistry.com.

An independent expert panel reviews data of each patient to confirm the diagnosis. The expert panel has two radiologists, two clinicians and two histopathologists. Data of the patient along with confirmed diagnosis are entered in the registry as verified. Diagnostic query of the panel is sent to the investigator, if it is not verified.

Preliminary data analysis from the registry shows that ILDs occur at a younger age compared to the western countries, and females are affected more. However, among IPF alone, the male to female ratio is 2:1. Breathlessness and dry cough were the most predominant symptoms. Symptomatic gastro-esophageal reflux was present in 30% of the cases. The most common diagnosis in the registry was IPF (27.5%) followed by NSIP, HP, occupational ILD, sarcoidosis and ILD secondary to collagen vascular diseases. Rare ILDs were also registered.

In conclusion, ILD India Registry intends to generate a national database on this disease. In the initial stages, the data would be helpful in knowing the pattern, distribution and determinants of the disease in our own population. It is likely that the data on prognosis and therapeutic aspects of the disease would be helpful in developing newer approaches to management.

Virendra Singh
Member, Editorial Board, and
Professor and Head of Division of Allergy and Pulmonary Medicine
Department of Medicine, S.M.S. Medical College and Hospital
Jaipur (Rajasthan)
and
Bharat Bhushan Sharma
Associate Professor
Division of Allergy and Pulmonary Medicine
Department of Medicine, S.M.S. Medical College and Hospital
Jaipur (Rajasthan)

REFERENCES

1. Raghu G. Interstitial lung disease. In: Goldman L, Schafer AI, editors *Cecil Medicine*; 24th editon. Philadelphia: W.B. Saunders;2011:pp556-66.
2. Morgenthau AS, Padilla ML. Spectrum of fibrosing diffuse parenchymal lung disease. *Mt Sinai J Med* 2009; 76:2-23.
3. Travis WD, Costabel U, Hansell DM, King TE Jr, Lynch DA, Nicholson AG, *et al.* An official American Thoracic Society / European Respiratory Society statement: update of the international multidisciplinary classification of the idiopathic interstitial pneumonias. *Am J Respir Crit Care Med* 2013;188:733-48.
4. Raghu G, Collard HR, Egan JJ, Martinez FJ, Behr J, Brown KK, *et al*. An official ATS / ERS / JRS / ALAT statement: idiopathic pulmonary fibrosis: evidence-based guidelines for diagnosis and management. *Am J Respir Crit Care Med* 2011;183:788-824.
5. King TE Jr, Pardo A, Selman M. Idiopathic pulmonary fibrosis. *Lancet* 2011;378:1949-61.
6. Coultas DB, Zumwalt RE, Black WC, Sobonya RE. The epidemiology of interstitial lung diseases. *Am J Respir Crit Care Med* 1994;150:967-72.
7. Thomeer MJ, Costabel U, Rizzato G, Poletti V, Demedts M. Comparison of registries of interstitial lung diseases in three European countries. *Eur Respir J* 2001;18 (Suppl. 32): 114s-118s.
8. Nalysnyk L, Cid-Ruzafa J, Rotella P, Esser D. Incidence and prevalence of idiopathic pulmonary fibrosis: review of the literature. *Eur Respir Rev* 2012;21:126, 355-61.
9. Olson AL, Swigris JJ, Lezotte DC, Norris JM, Wilson CG, Brown KK. Mortality from pulmonary fibrosis increased

in the United States from 1992–2003. *Am J Respir Crit Care Med* 2007;176:277-84.
10. Guenther A. The European IPF Network: towards better care for a dreadful disease. *Eur Respir J* 2011;37:747-8.
11. Olson AL, Swigris JJ. Idiopathic pulmonary fibrosis: diagnosis and epidemiology. *Clin Chest Med* 2012;33:41-50.
12. Macansch S, Glaspole I, Hopkins P, Moodley Y, Reynolds P, Walters H, *et al*. The Australian Idiopathic Pulmonary Fibrosis Registry: a national collaboration provides epidemiological insights and research opportunities. *Am J Respir Crit Care Med* 2013;187:A1457.
13. Jindal SK, Malik SK, Deodhar SD, Sharma BK. Fibrosing alveolitis: a report of 61 cases seen over the past five years. *Indian J Chest Dis Allied Sci* 1979;19:174-9.
14. Maheshwari U, Gupta D, Aggarwal AN, Jindal SK. Spectrum and diagnosis of idiopathic pulmonary fibrosis. *Indian J Chest Dis Allied Sci* 2004;46:23-6.
15. Sharma SK, Pande JN, Verma K, Guleria JS. Bronchoalveolar fluid (BALF) analysis in interstitial lung diseases: a 7 years experience. *Indian J Chest Dis Allied Sci* 1989;31:187-96.
16. Subhash HS, Ashwin I, Solomon SK, David T, Cherian AM, Thomas K. A comparative study on idiopathic pulmonary fibrosis and secondary diffuse parenchymal lung disease. *Indian J Med Sci* 2004;58:185-90.
17. Sen T, Udwadia ZF. Retrospective study of interstitial lung disease in a tertiary care centre in India. *Indian J Chest Dis Allied Sci* 2010;52:207-11.