Sir,

Interstitial lung diseases (ILDs) constitute a diverse group of pulmonary disorders classified together because of similar clinical, roentgenographic, physiologic, or pathologic features. ILD occurring due to exposure to obnoxious agents at workplace is known as occupational ILD (OILD). Some of these diseases are antiquity in other countries but continue to occur in India because of poor workplace safety enforcement. OILDs are preventable with reduction or elimination of workplace exposure. The workplace safety and awareness which is of paramount importance in developed countries however is dismal in developing countries like India. The clinical, radiological, and pathological features of OILD are almost similar to nonoccupational ILD (NOILD). The history of exposure is usually the only differentiating feature. If history of exposure is not taken properly, OILD, “the only preventable group of ILD,” can easily be misdiagnosed as NOILD leading to progression of disease. According to European registries, the prevalence of OILD is 4–18%. The Indian registry has reported incidence of 5.8% of OILD in a prospective study.

A retrospective observational study of different ILD was carried out in a tertiary care center to know the similarities and differences between OILD and NOILD. Patients were grouped in two groups based on history of exposure. The first group had patients with occupational exposure (OILD) and the second group had patients without any occupational exposure (NOILD). Both the groups were compared. The detailed anthropometric profiles, clinical history, smoking history, presence of comorbidities, and clinical findings were noted. Details of occupational history like place of work, type and duration of exposure to obnoxious agent at work place were also noted down. Awareness about the effects of occupational exposure and use of any protective measures were also noted.

Seventy patients were enrolled, among them 35 patients had occupational exposure and 35 did not have any occupational exposure, that is, 50% of the ILD patients were having OILD. OILD was due to asbestos exposure in 13, silica in 7, iron dust in 5, 2 due to rubber, 2 because of junk cleaning (exposed to hydrogen sulfide), and the remaining 6 had ceramic, glass, amoxicillin production, steel polish, balloon blowing, and welding exposure each. Two of our patients with asbestosis and talcosis each were misdiagnosed initially as idiopathic pulmonary fibrosis. In the OILD group, the average age of patients was 52.2 ± 10.2 years. Thirty one (88.57%) were men and four (11.42%) were women. The average duration of exposure was 21.8 ± 7.9 years. Average duration of symptoms was 22.08 ± 28.44 months. Four patients were asymptomatic and were diagnosed because of surveillance. Exertional dyspnea was the most common presenting complaint and was present in all the patients. The average FVC was 53.15 ± 8% of the predicted, FEV1 was 35.9 ± 11%, and the FEV1/FVC ratio was 0.72 ± 0.13.

The various NOILDs diagnosed were idiopathic pulmonary fibrosis (9), sarcoidosis (8), nonspecific interstitial pneumonia (7), hypersensitivity pneumonitis (5), systemic sclerosis (3), 1 each of rheumatoid arthritis (RA-ILD), Churg–Strauss syndrome, and combined pulmonary fibrosis and emphysema. Comparison between various characteristics of OILD and NOILD is described in Table 1. Average age of presentation was significantly higher in OILD compared to NOILD, that is, 52.2 ± 10.2 versus 43.16 ± 11.97 years (P-value = 0.003). The duration of symptoms was significantly higher in the OILD group. The presence of few respiratory symptoms at workplace over a period without proper awareness about the risk of exposure possibly made them ignore the symptoms and present late. The average room air saturation was significantly lower in OILD compared to NOILD, that is, 52.2 ± 10.2 versus 43.16 ± 11.97 years (P-value = 0.003). This validated the fact that our OILD patients presented in advanced stage of ILD compared to NOILD group due to ignored symptoms. We also found that in the OILD group, 16 had obstructive component in their spirometry compared to 10 in the NOILD group. This means that some of the OILDs like silicosis and asbestosis, which are otherwise nontreatable, may benefit with inhaler therapy due to small airway involvement.

Study of Clinico-Radiological Profiles of Patients with Occupational Interstitial Lung Disease in a Tertiary Care Center

Figure 1: Pie chart showing various numbers of OILD patients.
We found that none of the patients were using any protective measures at work place. Thirty out of thirty-five (85.6%) patients were unaware of the hazardous effect of the dust exposure. The data revealed that five patients knew about the hazards of exposure after their colleagues informed them. One of the workers who was educated by us, in turn, educated his colleagues. None of the patients except those five knew the details of inciting agents. They did not know that the symptoms and the disease they are suffering from were secondary to occupational exposure. They were not using protective gears or masks. None of them were subjected to any regular health check-ups or health education programs. None of the symptomatic patients attributed the symptoms to dust exposure at work place. Our study led to increased awareness amongst the workers and made them bring their colleagues to us. However, education, awareness, check-ups, and provision of protective gears need to be undertaken at state authority level. Our study exposes the glaring lacunae toward the health of our laborers and those working in industry exposed to noxious substance.

To conclude, OILDs should be carefully identified and separated from NOILDs. Patients of OILD in India have prolonged duration of symptoms and present late. OILD, if diagnosed early, can be prevented. Presence of obstructive component in PFT for OILD can be treated with bronchodilators. There is a dire need to educate our workers, evaluate them periodically, and advocate the use of preventive measures, if we need to prosper as an industrialized nation.

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**Conflicts of interest**
There are no conflicts of interest.

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**Table 1: Comparison between the OILD and NOILD groups**

|                      | OILD     | NOILD    | P        |
|----------------------|----------|----------|----------|
| Average age (years)  | 52.2±10.2| 43.16±11.97| 0.003 (<0.05) |
| Gender ratio (M:F)   | 31:4     | 5:30     |          |
| Average duration of symptoms (months) | 22.08±28.44 | 5.68±3.7 | 0.0018 (<0.05) |
| Severity of symptoms |          |          |          |
| Asymptomatic         | 4        | 2        |          |
| mMRC Gr 1            | 5        | 10       |          |
| mMRC Gr 2            | 21       | 19       |          |
| mMRC Gr 3            | 5        | 4        |          |
| Average room air oxygen saturation | 94.7±2.9% | 97.28±1.8% | 0.001 (<0.05) |
| Spirometry           |          |          |          |
| Normal               | 1        | 8        |          |
| Obstructive          | 0        | 4        |          |
| Restrictive          | 18       | 17       |          |
| Mixed                | 16       | 6        |          |
| Average FVC (% of predicted) | 68.84±14.5 | 53.15±8% | 1.05 (>0.05) |
| Chest radiograph     |          |          |          |
| Normal               | 12       | 11       |          |
| Reticulonodular      | 15       | 24       |          |
| Fibrotic opacity     | 5        | 0        |          |
| Nonspecific          | 3        | 0        |          |
| HRCT                 |          |          |          |
| Septal thickening    | 35       | 20       |          |
| Ground glass         | 18       | 15       |          |
| Honeycombing         | 13       | 11       |          |
| Centrilobular nodules| 18       | 7        |          |
| Fibrotic opacities   | 11       | 2        |          |
| Mosaic attenuation   | 6        | 4        |          |

We found that none of the patients were using any protective measures at work place. Thirty out of thirty-five (85.6%) patients were unaware of the hazardous effect of the dust exposure. The data revealed that five patients knew about the hazards of exposure after their colleagues informed them. One of the workers who was educated by us, in turn, educated his colleagues. None of the patients except those five knew the details of inciting agents. They did not know that the symptoms and the disease they are suffering from were secondary to occupational exposure. They were not using protective gears or masks. None of them were subjected to any regular health check-ups or health education programs. None of the symptomatic patients attributed the symptoms to dust exposure at work place. Our study led to increased awareness amongst the workers and made them bring their colleagues to us. However, education, awareness, check-ups, and provision of protective gears need to be undertaken at state authority level. Our study exposes the glaring lacunae toward the health of our laborers and those working in industry exposed to noxious substance.