



Prevalence of Respiratory Symptoms among Grain Processing Workers

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Abstract: sectional epidemiological studies have shown a higher prevalence of respiratory symptoms among grain growers compared to workers who are not so exposed, even after control for the effect of smoking. An ingredient used in food products, flour dust is a fine powder obtained by grinding cereals or other edible products. the seeds of starchy plants are suitable for grinding, and flour contains a known high proportion of starch, a complex carbohydrate as a polysaccharide. Also called grain dust, it is a complex a mixture of components, including plant products, insect fragments, animal dandruff, feces of birds and rodents, microorganisms- isms, endotoxins and pollen.

It also contains a mixture of allergens and has been known to cause breathing problems among bakers and millers since the eighteenth century. It has been implicated as one of the high molecular weight asta genes causing occupational or work-related asthma. It accounts for 7-9% of all cases of occupational asthma.

Keywords: OFV1, flour mill, FGEL, instructional, retroactive, spirometry

Introduction

In developing countries, a relatively large number of people are employed in agricultural processing industries, and this creates a problem of exposure to plant dust (grain, cotton, tobacco, tea) it's more serious there (WHO 1993).

Grain dust can also lead to the development of chronic bronchitis. Studies show that the component of grain dust responsible is endotoxin, which activates the complement leading to inflammation of the bronchi A significant relationship was found between dust exposure and respiratory hyperreactivity.

This may lead or be a predisposing factor to subsequent chronic irreversible airflow obstruction.

Suggestive symptoms[1,4] of chronic bronchitis or chronic productive cough were found in 29% of workers exposed to flour dust at a flour mill. [7,8]

In workers exposed to flour dust, cough prevails, shortness of breath, wheezing and chest tightness were between 8% and 13%, but there was 20% for rhinitis[9,10].

Flour dust is also known to cause lung fibrosis, and two cases of mixed dust have been reported of fibrosis in a poorly ventilated flour mill setting[9,11].

Grain and flour processors and loaders can be exposed to grain, which can be colonized by various microorganisms (e.g., *Sitophilus granarius*) that are easily aerosolized[10,11].

They are also at increased risk of infection for storing ticks and fungi[12,13].

This exposure can lead to pneumonitis hypersensitivity[10,13].

In occupational respiratory diseases, spirometry is one of the most important, widely used, basic, effort-dependent pulmonary functional test (PFT) and can measure the effects of restriction or obstruction of lung function[8,13].

Spirometry is considered as an integral component of any respiratory medical surveillance program. During the preliminary employment assessment, it can identify applicants with pre-existing respiratory disorders - measures to ensure proper employment and assistance in selection - ensuring proper respiratory protection. Periodic retesting workers can detect lung disease at the earliest stages when corrective measures are likely to benefit.

Such intervention could include improvement of industrial hygiene control, transfer to work or medical treatment. In addition, PFTS has taken on a key role in epidemiological studies of the frequency, natural history and causal relationship of occupational and environmental respiratory diseases[9,13].

The purpose of the study: to evaluate the lung function of flour mill workers and to study lung function disorders using spirometry.

Materials and methods:

An analytical case–control study was conducted on 40 workers of a flour mill and 40 comparable controls.

Data were collected using questionnaires, and lung function was assessed using an electronic spirometer. In those who show [1-4]

with a decrease in lung function, post-bronchodilation testing was performed. The results obtained were statistically evaluated.

Study population

It was a case–control analytical study, and the sub- objects were selected by simple random sampling. approved it. Each flour mill meas- a distance of about 15 m² it was staffed, on average, from one to two mill workers. As our sample size was 40, around when we started the project, 40 mills had to be visited, and 60 mill workers were interviewed. The detailed history of including or excluding employees based on inclusion and exclusion criteria was clarified.

Inclusion criteria

Workers working at a flour mill and exposed to flour dust (wheat flour) for at least 1 year were included in this study.

Exclusion criteria

Below are the exclusion criteria:

1. History of smoking.
2. A history of bronchial asthma before coming to work.
3. Present or past history of severe respiratory infection (extensive pulmonary tuberculosis, bronchiectasis, etc.).
4. Clinical anomalies of the spinal column and chest cage.

Of the 60 employees interviewed, 20 were excluded and 40 people were included. The project was explained to each of them by 40 employees in detail and their written informed consent was taken away. The workers were given a questionnaire indicating the following data: Personal — name, age, gender and address.

Related work — previous profession, number of years worked in the mill, the number of hours of exposure per day, whether it is the use of any mask or other protective measures in the workplace, and the time interval between admission to work and the appearance of symptoms.

Spirometry

A portable spirometer was delivered to the mills to check each worker.

The control samples were tested at the Terna Hospital and the Research Center (THRC) was conducted. Spirometry was carried out at 40 flour mill workers and 40 controls by a qualified doctor. The volume of the loop flow and OFV1, FVEL, OFV1/FVEL, FEF (25%-75%) were recorded using a calibrated Schiller Spirovit SP-1 pneumometer. The whole maneuver was explained to the subjects.

According to the current statement, spirometry can be performed both in a sitting position and in a standing position. [10]

The test was carried out in a sitting position using a disposable mouthpiece, disposable filters and a nose clip up to two permanent readings were obtained. Post-bronchodilation test- ing was performed in patients with reduced lung function after salbutamol spraying. Based on spirometry results, the degree of decrease in pulmonary function was assessed.

The result: a significant decrease in forced vital capacity (FVC), the volume of forced exhalation measured in the first second (FEV1)., forced exhalation (FEF) (25%-75%) and peak exhalation (PEF) were observed in 25% of subjects compared to 5% of controls, which is five times more than in controls. Post-bronchodilation tests showed a significant increase FVC, OFV1 and FEF (25%-75%). Of the 25% of subjects who had reduced lung function, 60% had obstructive and 40% had restrictive respiratory tract disorder. Of the 60% of obstructive anomalies, 83.33% were reversible, and 16.67% were reversible.

Irreversible airway obstruction.

Conclusion: We came to the conclusion that wheat flour mill workers are at increased risk of developing lung function disorders., the most common is reversible air flow obstruction. Workers should be informed about the dangers of flour dust, it is recommended to use personal protective equipment, it is recommended to make changes to equipment and ventilation in the workplace, as well as mochi is doomed to undergo periodic examination. These measures can be of great importance to prevent irreversible air flow obstruction.exposure to grain dust in the work environment causes an increase in work-related respiratory symptoms and decreased lung function. In this study, it is recommended to use control measures to reduce the level of dust exposure among mill workers, as well as periodic medical to assess the health status of employees, a survey should be conducted.

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