

Prevalence of Occupational Asthma Diagnosed by Specific Challenge Test in 5 Different Working Environments in Thailand

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Abstract : Introduction: Thailand is one of the fastest growing countries in Asia. It has emerged from agricultural to industrialized economy. Work places have shifted from farms to factories, offices and streets where employees are exposed to certain chemicals and pollutants causing occupational diseases particularly asthma. Work-related diseases are major concern and many studies have been published to demonstrate certain professions and their exposures that elevate the risk of asthma. Workers who exhibit coughing, wheezing and difficulty of breathing are brought to a health care setting where Pulmonary Function Test (PFT) is performed and based from results, they are then diagnosed of asthma. These patients, known to have occupational asthma eventually get well when removed from the exposure of the environment. Our study, focused on performing PFT or specific challenge test in diagnosing workers of occupational asthma with them executing the test within their workplace, maintaining the environment and their daily exposure to certain levels of chemicals and pollutants. This has provided us with an understanding and reliable diagnosis of occupational asthma. Objective: To identify the prevalence of Thai workers who develop asthma caused by exposure to pollutants and chemicals from their working environment by conducting interview and performing PFT or specific challenge test in their work places. Materials and Methods: This study was performed from January-March 2015 in Bangkok, Thailand. The percentage of abnormal symptoms of 940 workers in 5 different areas (factories of plastic, fertilizer, animal food, office and streets) were collected through a questionnaire. The demographic information, occupational history, and the state of health were determined using a questionnaire and checklists. PFT was executed in their work places and results were measured and evaluated. Results: Pulmonary Function test was performed by 940 participants. The specific challenge test was done in factories of plastic, fertilizer, animal food, office environment and on the streets of Thailand. Of the 100 participants working in the plastic industry, 65% complained of having respiratory symptoms. None of them had an abnormal PFT. From the participants who worked with fertilizers and are exposed to sulfur dioxide, out of 200 participants, 20% complained of having symptoms and 8% had abnormal PFT. The 300 subjects working with animal food reported that 45% complained of respiratory symptoms and 15% had abnormal PFT results. From the office environment where there is indoor pollution, Out of 140 subjects, 7% had symptoms and 4% had abnormal PFT. The 200 workers exposed to traffic pollution, 24% reported respiratory symptoms and 12% had abnormal PFT. Conclusion: We were able to identify and diagnose participants of occupational asthma through their abnormal lung function test done at their work places. The chemical agents and exposures were determined therefore effective management of workers with occupational asthma were advised to avoid further exposure for better chances of recovery. Further studies identifying the risk factors and causative agents of asthma in workplaces should be developed to encourage interventional strategies and programs that will prevent occupation related diseases particularly asthma.

Keywords : occupational asthma, pulmonary function test, specific challenge test, Thailand

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