

The most common risk factors of respiratory diseases especially lung cancer are smoking and environmental air pollution [1]. Smoking causing over 90% of lung cancers [2]. On the other hand, air pollution is confirmed as a major elevator for risk of lung cancer in polluted areas [3].

Several occupational carcinogens, including Asbestos, Aluminum and polycyclic aromatic hydrocarbons have also been proven to increase the risk for lung cancer [4,5]. Many work settings could have exposed workers to carcinogens, leading to an increased risk of lung and other cancers. Fifteen percent of male lung cancer cases that occur in industrialized countries are linked to occupation, which implies that lung cancer is the most frequent occupational cancer [6]. Inhalation of metal dust or fume can cause granulomatous lung diseases. Inhalation of Iron compounds causes siderosis, pneumoconiosis with little or no fibrosis [7]. Chronic inhalation of Aluminum dust and fumes result in pulmonary Aluminosis [8,7]. Evidence from occupational and environmental epidemiology studies using different designs, indicates that Iron foundry workers have increased risk of developing lung cancer [5].

Sputum cytology examination is still an important method for diagnosing lung cancer, and it is simple to perform. For instance, cytotyping accuracy in a comparison with histologic classification was very high [9,10].

Inhaled metal dust, particularly, Aluminum and/or Iron without defined means of protection is a highly prevalent occupational exposure and a recognized lung carcinogen. No previous studies have focused on such selected high-exposure occupational groups. This study investigated the relationship between occupational exposure to Aluminum and Iron and lung epithelia atypia in an occupationally diverse male population in Sudan.