

Epidemiology of Coal Workers' Lung Diseases



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COLUMN ARTICLE

Globally, coal resources are accounting for about 27.62 % of primary energy consumption [1,2]. China is true that coal accounts for more than 60 % of the national energy consumption [3]. Pneumoconiosis, an occupational lung hazard develops from the creation of dust particles in the coal production process and the reaction of the lung tissue to the dust [4]. Two forms of Coal workers' pneumoconiosis (CWP), a broad group of pneumoconiosis caused by exposure to respirable coal mine dust for several years can be classified: 1) Simple form where coal macules are surrounded by fibrosis and symptoms can include a cough or shortness of breath, 2) Complicated form or progressive massive fibrosis (PMF) is associated with fibrosis or lung scar of 10 mm. or greater and symptoms include chronic cough, shortness of breath, black sputum, pulmonary hypertension, pneumonia, and cardiac problems [5]. In 2013, about 25,000 (CWP) and 46,000 (black lung) coal worker's death were caused by pneumoconiosis worldwide [5]. In 2009, pneumoconiosis, silicosis, and asbestosis accounted for 29,000 deaths globally [6]. The World Health Organization (WHO) and the International Labour Organization (ILO) have promoted "The Global Silicosis Elimination Plan in the World by 2030" to decrease the impact of these diseases [7].

The United States of America (USA), Australia, and China were the top three coal-producing countries in the world in 2017 that produced 297.4 Mt, 371.3 Mt, and 1747.2 Mt (million ton oil equivalent), respectively [2].

In the USA, 37,965 cases of confirmed CWP were reported by the NIOSH from 1968 to 2015 [8]. For China, 21,719 new cases of occupational lung diseases were reported per year from 2003 to 2016 on average [8-20], whereas in Australia, very few cases of CWP were confirmed by the government agencies [5].

In conclusion, with the prevalence of complicated coal workers' lung disease, further studies are urgently needed to investigate a more accurate quantitative analysis. Additionally, more exploration into the mechanisms of cooperative governing involving the governments, workers, coal mines, and social organizations are also urgently required, including the healthcare aspects, insurance, and judiciary.

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