PNEUMOCONIOSIS AMONG DENTAL TECHNICIANS

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10.1136/oemed-2018-ICOHabstracts.1286

Introduction Dental technicians are exposed to various chemicals, including silica particles and metals. The aim of this study is to explore the pneumoconiosis risk among dental technicians.

Methods This is a cross-sectional study. We reviewed medical records (functional status and radiological findings) and serum prolidase levels of 62 patients who were admitted to our centre between September and December 2015.

Result All cases were male and silicosis was diagnosed in 37 (60.3%) of 62 cases. Prolidase level was significantly higher in patients with silicosis than in normal (p<0.001) (4877 ±2324 vs 815 ±520). Correlation analysis showed significant positive correlation between prolidase activity and ILO classification (r=0.723, p<0.001, figure 1A) and age (r: 0.391, p:0.002). Prolidase activity was negatively correlated with FEV1 (r:−0.332, p: 0.008) and FVC (r:−0.295, p:0.020).

Discussion Since prolidase is involved in collagen metabolism, it can be used for early diagnosis and follow-up of silicosis. Further studies are needed to clarify the etiopathogenetic mechanisms of silicotic nodule formation and early detection of vulnerable population who had silica exposure before nodule formation.

RETROSPECTIVE STUDY OF THE PULMONARY FINDINGS IN COMPLEMENTARY EXAMS IN RETIRED MINING WORKERS EXPOSED TO ASBESTOS

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10.1136/oemed-2018-ICOHabstracts.1287

Introduction Asbestos, a silicatum largely used in industry is responsible to harmful effects to the respiratory system, once inhalation and fibre accumulation of these materials in the pulmonary parenchyma are associated to pleural and pulmonary injuries. The objective of this study is to find the most prevalent pulmonary changes evaluated in asbestos’ exposed workers and verify if there is any risk factor associated.

Methods This was a cross-sectional study which evaluated 48 retired workers exposed more than 15 years to asbestos at aluminium mining industry at Poços de Caldas – Brazil. The workers were evaluated between June 2015-July 2016 and submitted to a structured analysis for data collection including: gender, age, smoking load, chest X-ray, chest computed tomography (CT), and spirometry (divided in normal, mild, moderate and severe alterations). The CT was applied in workers who had shown clinic, radiographic and spirometric alterations. It was applied Chi-Square method, p<0.05 using One-Way ANOVA and Tukey test.

Results All workers were male, mean age of 64 years-old. The mean FEV1 was higher in non-smokers group (95%) in comparison to ex-smokers group (88%) and smokers (82%). The FEV1 decay was proportional to smoking load increase; FVC lowest values were found in the smokers group (mean of 78%) and increasing FVC values in ex-smokers and non-smokers group. Lung emphysema and diffuse bronchial injury were the most prevalent findings, shown on 8 and 7 workers respectively. Only 2 workers presented pleural plaques.

Discussion The results suggested that smoking is an important risk factor for functional lung injuries, enhancing the harmful effects of asbestos chronic exposure. These data may contribute with strategies to enhance smoking cessation and preventive respiratory disease programs within the mining industry in order to prevent pulmonary injuries. These measures may possibly decrease the risk for developing lung diseases associated in asbestos’ exposed mining workers.

UNDER-REPORTED ASBESTOS-RELATED LUNG CANCER IN TAIWAN

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10.1136/oemed-2018-ICOHabstracts.1288

Introduction Mesothelioma is a rare malignancy, primarily caused by exposure to asbestos. The incidence rate of mesothelioma in Taiwan increased steadily in the previous two decades. However, very few of the mesothelioma patients received compensation due to their asbestos-related work. This study aims to examine the status of reported and unreported asbestos-related lung cancer, particularly mesothelioma in...
Taiwan, and to provide recommendations for improving the surveillance system.

**Methods** The reporting system of occupational diseases initiated by Department of Labour was used to retrieve the cases of occupational lung cancer from 2008 to 2014. Descriptive analysis was conducted including identification of exposure to asbestos. We further compared the data with Taiwan Cancer Registry. A review for international comparison of mesothelioma surveillance system was performed.

**Results** 73 cases of occupational lung cancer were reported, and 42 were suspected to be asbestos-related. 31 cases were confirmed as malignant mesothelioma. Only one of the 42 asbestos-related lung cancer cases was female. Their occupations and industries included construction (36%), work concerning installation and repair of boilers (24%), and shipyard and ship breaking (19%). The year of age at the time of diagnosis was 60.5, while the induction time was 35.2 years. In the same period, 349 mesothelioma cases were identified in the Taiwan Cancer Registry.

**Discussion** This study showed that very few mesothelioma patients seek compensation in Taiwan. Further review showed that mesothelioma surveillance system was established in many countries to provide information of mesothelioma epidemic and investigate in asbestos exposure. Some have a specific registry and rely on medical doctor, particularly pathologists, to report. Some directly link the data from the pre-existing cancer registry. In Taiwan, all hospitals were mandated to submit cancer data to the central cancer registry. Improving linkage between mesothelioma surveillance and cancer registry should be considered.

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**1437 EARLY DETECTION OF ASBESTOS-RELATED LUNG CANCER BY LOW-DOSE MULTISLICE-CT (LOW-DOSE MSCT)**

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**Introduction** Lung cancer is the most common cause of death from cancer worldwide, estimated to be responsible for nearly one in five (18%), or 1.38 million, cancer deaths in 2008. Of all risk factors, smoking has been identified as the major risk factor. Other causes of lung cancer include occupational (e.g. asbestos) and environmental exposures (e.g. radon decay products). Despite the reduction or ban of asbestos use in many countries, the global incidence of asbestos-related lung cancer is still increasing. Nevertheless, asbestos is still produced and exported in some countries in the world. The National Lung Screening Trial (NLST) enrolled persons at high risk for lung cancer to undergo annual screenings with either low-dose CT or single-view posteroanterior chest radiography. In the low CT-group, mortality from lung cancer was reduced by 20.0%. Currently, secondary prevention strategies are extensively discussed to reduce mortality from lung cancer.

**Methods** In Germany, more than 80% of lung cancers are diagnosed at an advanced disease stage (clinical stages IIIa, IIIb, and IV) where the survival rate is poor. Since lung cancer is only curable at an early stage of the disease, in Germany, formerly asbestos-exposed insured individuals have the statutory right to receive ‘follow-up occupational medical examinations’ which target the early detection of asbestos-related diseases. Recently, the German Social Accident Insurance (DGUV) founded a working group to establish an annual low-dose MSCT scanning program.

**Results** The eligibility criteria for participants are: at least 10 years of exposure to asbestos (starting before 1985) or a recognised case of asbestos-induced occupational disease (No. 4103 BKV), between 55 and 74 years of age and a history of cigarette smoking of at least 30 pack years. The participants are contacted by GVS (a joint organisation involving all German social accident insurance institutions) or the specific statutory accident insurance and examinations are offered which are carried out locally by selected physicians. A quit-smoking counselling is provided, and participants are asked to donate blood for biomarker research. For MSCT scanning, at least 16