

904 SILICOSIS MORBIDITY ASPECTS IN THE CLINIC OF OCCUPATIONAL MEDICINE TIMISOARA

¹Florina Georgeta Popescu, ¹Elena-Ana Păuncu, ²Cristina Nica, ¹Madia Celita Paraschiva Hanna. ¹Occupational Medicine Discipline, University of Medicine and Pharmacy 'Victor Babes' Timisoara, Romania; ²Occupational Medicine Clinic, Emergency County Clinic Hospital, Timisoara, Romania

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Introduction Silicosis, one of the oldest occupational diseases, present until recently in the occupational diseases top, was replaced by the overstraining diseases. In Romania, it remains on the second place in the occupational diseases hierarchy, a number of 203 new cases of silicosis being registered in 2012, as opposed to 263 cases of musculoskeletal disorders registered on the first position. In comparison to 428 cases in 2003, the number of new cases of silicosis was reduced almost by half in 2012.

Goal To analyse the silicosis cases hospitalized in the Occupational Medicine Clinic in Timisoara for a period of five years. **Material and methods** We collected the data from the clinical medical records of silicosis patients who were hospitalized in our clinic between 2008 and 2012. We took into consideration the following parameters: profession, age, exposure time to silica dust, ILO codification, spirometry test, biological status, associated pathology, complications and evolution.

Results and discussions The studied group contained 346 patients, which represented 50.07% of occupational respiratory cases, but only 13% of all hospitalized patients. Average time of exposure was 23.79 ± 7.97 years, and average age was 53.14 ± 9.31 years old. 38.43% represented the new cases which were signaled as professional diseases, but only 73.68% were declared as occupational ones. According to the ILO classification, when diagnosed, 28.81% of patients had small opacities which represented a second category of profusion. Few patients (7%) associated other pathologies such as tuberculosis, anthracosis, siderosis, but also, many of them had musculoskeletal (62.01%) and cardiovascular (54.23%) diseases. We have to mention 3 cases of silicosis associated with autoimmune diseases: lupus erythematosus, rheumatoid polyarthritis.

Conclusions Although the occurrence is low, because of the disappearance of workplaces with exposure to silica (mines, foundries), occupational medicine services must keep under surveillance these workers throughout their lifetime. We have to be aware of the cancer risk and at the same time it is important for them to have a healthy lifestyle. Also, it is mandatory to include these patients in monitoring and rehabilitation programmes.

1234 SILICOSIS TRENDS IN CLUJ-NAPOCA, ROMANIA OVER 35 YEARS OF EXPERIENCE

¹AG Răjnoveanu*, ²C Asăujan, ²S Toma, ²M Bucur. ¹Iuliu ȘHatieganu University of Medicine and Pharmacy, Occupational Health Department, Cluj-Napoca, Romania; ²Spitalul Clinic Județean de Urgență, Compartimentul Medicina Muncii, Cluj-Napoca, Romania

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Introduction Occupational Health Unit of the Cluj-Napoca Emergency General County Hospital has a long and strong

experience in diagnosing occupational lung disease and especially in diagnosing pneumoconiosis according to International Labour Organisation (ILO) classification. This study retrospectively searched for trends in characteristics of new silicosis cases reported by this unit over more than 35 years of activity.

Methods We reviewed medical records of all new cases of silicosis identified between 1980–1985 (93 subjects – group I), 2000–2005 (62 subjects – group II) and 2011–2016 (60 subjects, group III). We compared for each group their mean age at diagnosis, gender distribution, smoking habit, type of industry as source of exposure to mineral dust, radiological findings (according to ILO Classification of Radiographs of Pneumoconiosis), pulmonary function tests (PFT).

Results Mean age at diagnosis for the last group (57.15 years) compared to the other two (group I – 51.87 and group II – 52.24 years); sex distribution: females for the last two groups (16.12% group II and 5% group III compared to 0 cases in group I). The vast majority of patients in group I (97%) were from mining industry; in group II mining was represented by only 38% of patients, while foundries took the lead by 52% and some other industries were responsible for 10% cases, distribution remaining the same in group III (40% mining industry, 41.66% – foundries and 18.33% other industries). A slight increase in group III was found in smoking habit prevalence (58% – group I, 55% – group II and 65% – group III current or ex-smokers). The most important data regarded opacities profusion and size on radiographs and pulmonary function tests results. If in group I we found a fairly even distribution for profusions (23%–1, 26%–2, 16%–3), radiographs with axe symbol (13%) and with large opacities (22%), in group II and III profusion 1 was predominant (68% and 40%) and profusion 2 (19% and 36.66%) was also significant. On the other hand, in group I restrictive pattern at PFT was in the first place (42%) and obstructive pattern in group II (52%). In group III ventilatory defects were less frequent (28.33% obstructive and just 6.66% restrictive).

Conclusion Our results suggest significant changes in silicosis pattern in studied population. Age for first diagnosis tends to increase, radiological findings are less severe and pulmonary dysfunctions are less frequent. All these changes might be explained by a major shift in job exposure suggested by a decrease in mining activities and increase for other industries, especially foundries in our area of research.

1113 PLEURAL PLAQUES: MARKERS OF ASBESTOS EXPOSURE OR INDEPENDENT RISK FACTOR FOR PLEURAL MESOTHELIOMA? A CASE REPORT

¹Pietro Sartorelli, ¹Gabriele d'Hauw, ¹Antonietta Gerardina Sisinni, ¹Riccardo Romeo, ¹Valentina Paolucci, ²Donatella Spina. ¹Department of Medical Biotechnology, Unit of Occupational Medicine AOU Senese, University of Siena, Siena, Italy; ²Department of Medical Biotechnology, Unit of Anatomic Pathology AOU Senese, University of Siena

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Pleural plaques (PPs) represent the most common non malignant asbestos-related disease. Currently PPs are widely referred as a marker of asbestos exposure and not as an independent

risk factor for the development of asbestos-related neoplastic diseases (1). However, the association between PPs and pleural mesothelioma (PM) remains controversial, as some studies on cohorts of asbestos exposed workers have shown correlation between PPs and PM. Despite this, scientific literature is poor. Research has been focused on the relationship between PPs and lung cancer, while there is a lack of studies on the possible relationship between PPs and the development of PM.

Case presentation A clinical case of a patient affected by asbestosis and PPs with a history of occupational asbestos exposure is presented. During the follow up a PM was diagnosed at a PP.

Conclusions The widespread belief that there is no relationship between PPs and PM is not supported by a vast literature as it happens for the absence of association between PPs and lung cancer. In the patient described it is not possible to determine whether the localization of the PM at a PP is incidental or not and whether the PM can be attributed only to intense exposure or even to the presence of PPs. Similar cases may not be uncommon even if not reported in the literature.

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CHANGE THE PROFILE OF SILICOSIS IN UNDERGROUND GOLD MINING IN MINAS GERAIS, BRAZIL

¹LL Silva, ²LPC Lima, ³CC Barbosa, ADM³, ³AS Mosci, ⁴DNP Della Torre, ⁵AM Silveira*, ⁵APS Carneiro. ¹Santa Casa de Misericórdia de Belo Horizonte Hospital, Brazil; ²Specialization in Occupational Medicine, Faculdade de Ciências Médicas/MG, Belo Horizonte, Brazil; ³Justiça do Trabalho, Belo Horizonte, Brazil; ⁴Occupational Medicine Residency, Hospital das Clínicas, UFMG, Belo Horizonte, Brazil; ⁵Hospital das Clínicas, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

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Introduction Minas Gerais is the Brazilian state with the highest reported number of silicosis, much of which originated from gold mining industry. The objective was to analyse the temporal occurrence of silicosis in gold mining identifying occupational factors related it.

Methods Cross-sectional study with 1022 former gold miners workers of Nova Lima (MG), conducted between 1995 and 2011.

Results Silicosis was diagnosed in 20.1% of the workers none of whom worked on the surface. Those who have worked in underground for up to 5 years had 4.4% prevalence in contrast to those with more than 20 years, whose prevalence was 35.8%. Among those who started work in underground until the 1950 the disease had a prevalence of 73.3% while among those that started after 1990 no cases were identified.

Discussion It have occurred a significant drop in the incidence of silicosis in gold mining. The disease is known to be dose-dependent so is expected the decrease in the number of cases by improvements in work environments. It is essential that measures continue to be implemented in all fields of activity with exposure to silica to decrease the number of cases.

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ASSESSMENT OF SERUM AND URINARY BIOMARKERS FOR PNEUMOCONIOSIS IN A COHORT OF STONE WORKERS EXPOSED TO ASBESTOS CONTAMINATED MINERALS

^{1,2,3}Hsiao-Yu Yang*, ^{1,2,3,4}Pau-Chung Chen. ¹Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University College of Public Health, Taipei, Taiwan; ²Department of Public Health, National Taiwan University College of Public Health, Taipei, Taiwan; ³Department of Environmental and Occupational Medicine, National Taiwan University Hospital, Taipei, Taiwan; ⁴Department of Environmental and Occupational Medicine, National Taiwan University College of Medicine, Taipei, Taiwan

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Introduction Pneumoconiosis resurged in recent years but current medical surveillance programs have flaws that result in low detection rate. Development of new screening tools is warranted. The objective of the study was to develop serum and urinary screening tests for pneumoconiosis.

Methods We conducted a cross-sectional study in 140 stone workers between March 2013 and July 2014. We compared serum soluble mesothelin-related peptide (SMRP), fibulin-3, and urinary 8-Oxo-2'-deoxyguanosine (8-OHdG)/Creatinine between cases of pneumoconiosis and control. Using the ILO international classification of radiographs of pneumoconiosis profusion subcategory $\geq 1/0$ combined with restrictive type ventilatory impairment in standard pulmonary function test (FVC <80% of predicted and/or FEV1/FVC >70% of predicted) as the reference standard, we calculated sensitivity, specificity, false positive, false negative, and the likelihood ratio of the biomarkers. We created the receiver operating characteristic (ROC), calculated the area under the curve (AUC) and decided the cut-off values using the Youden index.

Results After excluding one subject with uremia and one subject with COPD, a total of 138 subjects were enrolled that included 20 cases and 118 controls. The ROC-AUC was 0.7 for SMRP (95% CI: 0.5 to 0.8), 0.5 for Fibulin-3 (95% CI: 0.4 to 0.7), and 0.5 for 8-OHdG/Creatinine (95% CI: 0.4 to 0.6). There was a dose-response relationship between SMRP and the severity of pneumoconiosis. Using SMRP larger than 0.62 nM as the cutoff value, the diagnostic test had the highest positive likelihood ratio followed by using fibulin-3 larger than 43.9 ng/mL as cutoff value, and then 101.65 ng/mg for 8-OHdG/Creatinine. In the case group, 65% of subjects processed asbestos-contaminated ores including nephrite, antigorite, or talc. Subjects exposed to nephrite had significantly higher level of SMRP than exposed to other types of stones.

Conclusion SMRP might be used in the screening for workers exposed to asbestos contaminated minerals.

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OCCUPATIONAL LUNG DISEASE

Paul Mckeagey*. Belfast City Hospital, Belfast, UK

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¹David Fishwick, ²Johanna Feary
¹University of Sheffield, Sheffield, UK
²Brompton Hospital, London, UK