| 1070 | CONTRIBUTION OF BONE MARROW-DERIVED FIBROCYTES TO SILICOSIS |

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Introduction Exposure to free silica induces silicosis and its mechanism is less clear. Myofibroblast is regarded as a primary effector cell which is highly synthetic for collagen and lead to extensive fibrosis in lung. However, its origin is still controversial. Fibrocyte is one source of myofibroblast and proved to play a pivotal role in lung fibrogenesis, but whether fibrocyte participates in the process of silicosis is rarely reported. Therefore, the present study was designed to investigate the contribution of fibrocytes in silicosis.

Method The rat model of silicosis was established by single intratracheal instillation of SiO_2 solution (100 mg/0.5 ml/rat). HE and Masson staining were used to evaluate the histopathology and collagen deposition. Flow cytometry and immunofluorescence were performed to detect number of fibrocytes and contribution to myofibroblasts.

Results During experimental silicosis (from week 1, 2, 3, 6, 9, 12), the number of fibrocyte is markedly increased in peripheral blood and lung tissue by using flow cytometry.Further study found that $CD45^+$ collagen I^+ fibrocyte is existed in lung tissue by using double-colour immunofluorescence analysis. Meanwhile, fibrocyte and lung type II epithelial cells contribute 15%~35% and 9%~21% of myofibroblasts, respectively. The trend analysis of different sources of myofibroblast during silicosis indicates that fibrocyte and lung type II epithelial cell derived myofibroblast play an important role at the early stage of silicosis (week 1 to week 3), while resident lung fibroblast-derived myofibroblast mainly do a predominant role during fibrosis formative period (week 6 to week 12).

Discussion Taken together, these data suggest that fibrocyte is involved in the pathogenesis of silicosis and it may be useful as an indicator for disease activeity. Different sources of myofibroblasts play roles in different phases of silicosis.

| 608 | CHRONIC OBSTRUCTIVE PULMONARY DISORDER IN CHRONICALLY EXPOSED TO SILICA: EXPERIENCE OF HOSPITAL DAS CLINICAS DA UFMG |

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Introduction There is no description in literature for relationship between exposure to silica and occurrence of COPD in Brazilian population. This work aims to evaluate the importance of this exposure as a predisposing factor for chronic obstructive ventilation disorder (OVD) and associate the time of exposure with the FEV1/FVC ratio.

Methods Serie of cases with 1389 patients, from 1984 to 2017. The cases were evaluated in relation to: chest X-ray, spirometry, clinical and occupational history. The spirometry classification was based on Brazilian guidelines.

Results All patients analysed were exposed to silica (median exposure: 15 years). The median age was 46.0 years (97% male). Smokers or ex-smokers accounted 59.1%. Silicosis was diagnosed in 44.0%, current tuberculosis or sequela 12.8%, asthma 5.6%; Autoimmune diseases 2.9% and heart diseases 4.0%. Spirometrics of 975 patients were analysed (OVD: 38.3%). After exclusion of TB and asthma patients, the prevalence of OVD decreased to 33.5%. Excluding silicosis patients, the prevalence of disorder was 24.9%. In the last subgroup, excluding smokers and ex-smokers, the prevalence of OVD was 15%. A subgroup with homogeneous exposure (165 lapidaries of semiprecious stones) was selected to evaluate the contribution of smoking (years/packet) and time of exposure to silica in the FEV1/FVC ratio. Linear regression model was applied. Each year of exposure to silica showed a worsening in FEV1/FVC ratio of 0.002 and each year/packet had a 0.003 reduction (p-value 0.034 and 0.000, respectively).

Conclusion A prevalence of 15% of OVD was demonstrated in individuals whose only risk factor was exposure to silica. In the subgroup of homogeneous exposure it was possible to establish an exposure unit that could be compared with years/packet of cigarettes. The importance of both, independently, for the occurrence of OVD has been demonstrated.

| 598 | SILICOSE'S IMPACT ON THE INCIDENCE OF TUBERCULOSIS IN THE GENERAL POPULATION OF MINAS GERAIS: ANALYSIS FROM 2002 TO 2016 |

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Introduction In Brazil, both silicosis and tuberculosis (TB) have high prevalence rates, although there are regional differences. Silicosis is the most common pneumoconiosis in the world and silica's exposure is a predisposing factor for TB, even in workers without silicosis. However, little is known about the influence of silicosis on TB rates in general population. The objective of this study is evaluate the impact of silicosis on epidemiology of tuberculosis in general population in cities of Minas Gerais (MG) state.

Methods Ecological study, based on DATASUS data, from 2002 to 2016. TB rates in cities with known silica exposure (case-cities) were compared to others with no evidence of such exposure (control cities). The cities were matched in relation to: incidence of AIDS, HDI (longevity, education and income) and percentage of occupation in the mineral's extractivism sector.

Result The TB rates per 1 00 000 inhabitants were higher in the case-cities compared to the control-cities (158,8 and 41,3, respectively, p=0.00032). In the case-cities, the ratio found of man and women with TB was 1.85/1, being close to the rest of the state (2.29/1 in 2015).

Discussion The silica exposure and silicosis may influence the elevation of TB rates in the general MG population. Because of the similarity of male/female ratio in the case-cities when compared to the rest of the state, it's possible that this increase does not come only from patients with silico-tuberculosis. The difficulties of diagnosis and treatment of TB in patients with silicosis delay the therapeutic strategy, which

may result in a greater spread of TB among their contacts. However, new studies are needed to determine risk factors at the individual level, in order to guide preventive actions for silicosis and TB in regions with silica exposure activities.

1344 | RELATIONSHIP BETWEEN SPIROMETRIC VALUES AND THE HISTORY OF ENVIRONMENTAL EXPOSURE TO ASBESTOS IN A COMMUNITY IN THE STATE OF MEXICO

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Introduction It has been established that environmental exposure due to residence in the vicinity of factories where asbestos use is associated with the risk of lung disorders.

Objective To relate the history of environmental exposure to asbestos, with spirometric values of an adult population of the community of San Pedro Barrientos, Tlalnepantla in the state of Mexico.

Material and methods A spirometry accompanied by a questionnaire of occupational and environmental exposure to a sample of 123 adult inhabitants, who had a history of having lived in the community for at least a year in the period was performed, and respiratory symptoms ranging from 1943–1998, during which time he was one of the active processing plants nation's largest asbestos.

Results The equations that best adjusted to calculate the predicted values in the study population, forced expiratory volume in one second (FEV1) and forced vital capacity (FVC) were the NHANESIII study of Mexico-American population (June, 2001).

A negative correlation between years of residence in the community found Barrientos, with the percentage obtained in the FEV1/FVC, FVC and FEV1 with a value of −0.05,–0.16 and −0.22 respectively. Which is an indicator of the tendency to have lower percentages in spirometric values increased residence time in the community.

Conclusions Given that spirometry is the most accessible to evaluate mechanical ventilation test, and is useful for the diagnosis and monitoring of various diseases, efforts should be made to make it available and perform as recommended standardisation in order to have acceptable and reproducible manoeuvres. It is important to note the trend of the results, which indicate that the longer the exposure subjects had lower percentages predicted spirometry values (adjusted for sex, age and height).

The result of this research supports the recommendations issued by the United Nations (UN) and the International Labour Organisation (ILO), which states that there is no safe level of exposure to asbestos and should promote the elimination of Use in whatever form and materials containing.

We recommend further studies extension to the population and evaluated the study spirometry to identify any histopathological damage by environmental exposure to asbestos, as well as make the surrounding population studies that community spirometry.

1375 | ASSOCIATION BETWEEN AGE-STRATIFIED OBSTRUCTIVE SLEEP APNEA SYNDROME AND OBESITY

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Introduction Obstructive sleep apnea (OSA) among public-transportation drivers becomes a social concern in a certain number of traffic accidents. Major risk factors of OSA were reportedly obesity and ageing; however, age stratified relationship between OSA and risk factors have yet to be evaluated. This study aimed to evaluate the association between OSA and obesity stratified by age-groups.

Methods One hundred and fifty-five bus drivers were screened by the flow sensor method, to detect subject with a respiratory disturbance index (RDI) more than 15. Then, portable polysomnography (PSG) tests were performed to measure an apnea hypopnea Index (AHI): subjects with AHI≥40 were diagnosed as OSA; for those with 20≤AHI<40 full PSG tests were performed. Portable PSG AHI≥20 was diagnosed as OSA. Relationship between OSA and BMI were statistically compared in three age-groups; younger than 40, 40 to 49, and 50 and older by the logistic regression analysis and unpaired t-test.

Result Of the 152 subjects (45.2±9.3 year-old, BMI 24.5±4.5) after excluding 4 subjects (unexamined by PSG), 55 subjects showed RDI>15 by the screening test and underwent PSG. 25 subjects were diagnosed as a definite OSA. BMI was significantly associated with OSA with OR of 1.17 (95% CI: 1.06 to 1.29). ORs for OSA become greater as the age increased showing greatest OR in 50 and older (OR 5.15, 95% CI: 1.17 to 22.8). Mean BMI of OSA subjects with younger than 40 was greater than that of non-OSA (BMI 34.8±9.3 and 23.1±5.2, respectively, p=0.0012), however, no difference was found in those with 40–49 and 50 and older.

Discussion The result suggests weight reduction may more effective for younger drivers. Obesity of the drivers is highly associated with OSA for younger than 40, while ageing is more correlated with OSA than obesity for 50 and older.

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868 | RESPIRATORY SYMPTOMS IN COFFEE WORKERS OF LAVRAS – MINAS GERAIS

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Introduction The importance of coffee to the country can be verified by the Brazilian leadership in world production and export, as well as being the second largest consumer of the product in the world (MINISTRY OF AGRICULTURE, 2017). The literature shows that coffee processing workers are subject to a higher