21 ANCA positive vasculitis and silica exposure: the fifteen years experience of the Brescia area

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Brescia area, city and province, is a region of one milion inhabitants. The ANCA-test for this area is performed in a single hospital (Spedali Civili) and positive patients are all visited by a single group of doctors of the same hospital. This would be the ideal situation to make epidemiological evaluations of the ANCA positive diseases. Since the beginning, besides many other investigations, patients were submitted to a careful analysis of the work exposures. Occupational exposures were evaluated by an industrial hygienist by directly interviewing the patients. Silica exposure was assessed by identifying jobs known to be associated with silica exposure and by collecting and analyzing data related to the sources of silica dust, protection equipment and department features. Starting in 1987 until April 2002, a diagnosis of ANCA-associated vasculitis was made in 202 pts, 75 had a diagnosis of Wegener Granulomatosis (WG), 127 had a diagnosis of Micropoliangiitis/Rapidly Progressive Glomerulonephrytis (MPA/RPGN). 14 patients had already had a diagnosis of pulmonary silicosis time before the diagnosis of ANCA positive diseases based on significant occupational exposure and characteristic abnormalities of chest X-rays, classified according to ILO1971. A significant occupational exposure to silica came out in other 17 patients. Analysis of silica exposure revealed that 14 pts had been miners, in mines or in tunnels, 8 pts worked in foundries, 4 pts worked as bricklayers for as many as 50-60 years, all in small companies and mainly employed in demolition, 3 pts worked in a pottery factory, 1 pt was stonemason, 1 pt worked in a stone grinding factory and 1 worked in a sand producing company. 2 patients worked in dental supplies laboratories, 1 as technician, 1 as a dentist. 1 pt had worked for many years in polishing metals with abrasives. Some pts had performed more than one of the cited exposing jobs. Evaluation of working places revealed that some of these pts had worked in in the same factory or with the same company. All 31 silica-exposed patients were in the group of MPA/RPGN, none in the group of WG pts. Clinical manifestations of ANCA positive vasculitis included constitutional symptoms (weigth loss in 80% of pts, arthralgias in 30%, myalgias in 50%, fever in 35%), pulmonary hemorrhage in 55% and renal failure due to rapidly progressive glomerolonephritis (biopsy proven in 80%) in all pts. High levels of C-Reactive Protein were present in 90% of pts and 25% of pts presented high levels of Rheumatoid Factor. ANCA-test in all but 4 patients had P-ANCA/anti-MPO specificity. The clinical picture in the 4 pts C-ANCA/PR3 positive was not different. We can confirm our previous observation that ANCA positive (mainly p-ANCA/anti-MPO positive) MPA/RPGN are associated to silica exposure.

22 Assessing occupational exposure to crystalline silica in a population-based study of systemic *lupus erythematosus* (SLE)

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Objectives: Crystalline silica has been associated with SLE in highly exposed workers and silicosis patients. Population-based studies of this association are difficult to conduct, because most SLE patients are female and few women work in the traditional dusty trades. Assessment of silica exposure in epidemiologic studies has typically been limited to long-term work in the in the dusty trades industries, and although measurement studies have documented substantial silica exposure in agriculture, previous epidemiologic studies have not considered farm work as a source of silica exposure. Here we compare methods for assessing silica exposure from dusty trades and farm work in a population-based study of SLE in the southeastern United States.
Methods: Cases were recently diagnosed SLE patients (n=265; 90% women). Controls (n=265) were selected from state driver's license registries and frequency-matched to cases on age and sex. In-person interviews included a lifetime job history (jobs ≥12 months), a checklist of silica-related jobs and tasks (duration ≥2 weeks), and a detailed farming history. Three industrial hygienists independently reviewed the job descriptions, blinded to case-control status. Potential medium or high-level exposures were confirmed by follow-up telephone interviews that collected additional information on dusty tasks and materials. We compared the associations between occupational silica exposure and SLE using this full assessment strategy to the associations observed with more limited assessment procedures. Regional soil types contain up to 30% silica, so we designed a specific questionnaire to assess silica exposure from farm work.
Results: Based on the full assessment (industrial hygienist review plus follow-up interviews), 9% of cases and 4% of controls had a history of medium or high-level silica exposure from dusty trades (OR=3.0; 95% CI 1.3-6.8). Only 4% of cases and 9% of controls could be identified as potentially exposed using standardized codes for silica-related industries or occupations (OR=0.4; 95% CI 0.2-0.9). Six percent of cases and 5% of controls were rated as medium or high-level exposure (OR=1.6; 95% CI 0.7-3.4) using standardized codes (potential exposure in both industry and occupation) combined with responses to the job-task checklist. Farm work was common (44% cases and 39% controls), but was not associated with SLE (OR=1.0, 95% CI 0.5-2.0). However, more specific indices of silica exposure were positively associated with SLE: i.e., work in sandy soils (OR=2.2, 95% CI 1.2-4.7) and specific dusty tasks (OR=3.0, 95% CI 1.1-8.2).
Conclusions: These results illustrate the importance of using rigorous exposure assessment methods in population-based studies of silica-related health effects. Misclassification due to the use of surrogate measures of silica exposure may substantially bias the observed results. Farm work should also be included as a source of silica exposure through the use of specific indicators of soil dust and soil silica levels.

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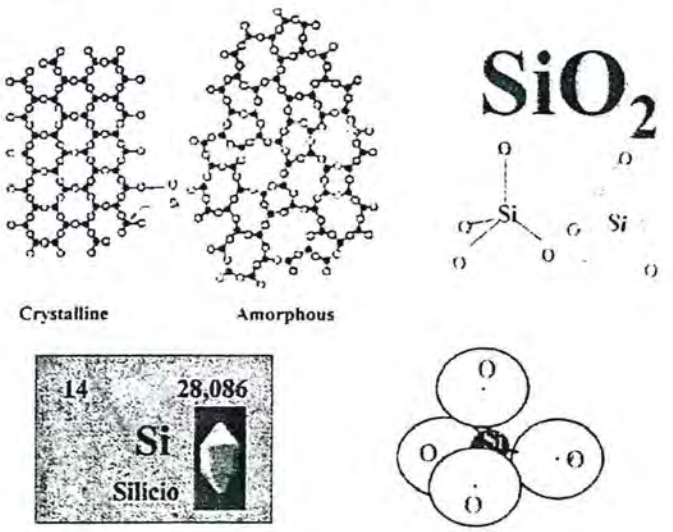

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