Occupational Exposures Of Workers With Occupational Asthma And Work-Exacerbated Asthma

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Background: The respective occupational exposures of subjects with Occupational Asthma (OA) and Work-Exacerbated Asthma (WEA) have been seldom described.
Aim: To characterize and compare the occupational exposures of incident cases of OA and WEA.
Methods: Subjects suspected of work-related asthma as well as non-work-related asthmatic controls were enrolled in a prospective cohort study between 2005 and 2008 in two Quebec tertiary centre. Their work exposures were assessed using a questionnaire covering their employer and employment. Exposure to 45 agents, sensitizers and irritants, was coded in a semi-quantitative way as low or substantial according to a combination of indices for concentration in workplace air, frequency and reliability of exposure by an occupational hygienist who was blind to the diagnosis of WEA or OA. Specific inhalation challenges (SIC) were performed subsequently. The diagnosis of WEA and OA was made according to the results of SIC.Various combination of the exposure parameters were used. Multivariate regressions produced similar results to bivariate analyses, which we present here.
Results: One hundred and fifty two subjects were enrolled (54 WEA, 63 OA and 35 asthmatic controls). Specific exposures to acrylates, adhesives, ammonia, degreaser/stripper, pyrolisis fumes, hardeners, mineral fibres, metal fumes, isocyanates, paints and solvents were more prevalent in subjects with WEA compared with controls whereas exposure to animal aerosols, wood dust, flour, adhesives, metal fumes, isocyanates, paint and solvents were more prevalent in OA compared with control subjects. Furthermore, subjects with WEA were more exposed to solvents, silica and exhaust gases than subjects with OA but less exposed to animal aerosols, flour and enzymes than subjects with OA.
Conclusions: Exposures associated to WEA differ in good part from those associated with OA. More specifically it remains to be determined whether prolonged exposure to solvents, silica and exhaust gas is able to induce asthma.

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