Methods We applied g-estimation of structural accelerated failure time models to estimate the number of years of life that could have been saved for mortality from all natural causes and from lung cancer if exposure to crystalline silica had been prevented among 2342 white male workers in the diatomaceous earth industry (1942–2011). Exposures were lagged 17 years because exposure data were only available through 1994; this also accounts for disease latency. Analyses adjusted for calendar year, age, Latino ethnicity, smoking status, duration of employment in the diatomaceous earth industry and exposure to crystalline silica before entering follow-up, prior exposure to crystalline silica, prior cumulative exposure to dust and asbestos, time taken off work, and employment status.

Results If all workers had been unexposed to crystalline silica, we estimated that workers who died of natural causes would have survived, on average, 1.1 years longer (95% CI: 0.3, 2.3) overall. Workers who died from lung cancer would have survived an estimated average of 9.0 years longer (95% CI: 4.4, 16.2) if they had been unexposed.

Conclusions A ban on exposure to crystalline silica in this cohort would have resulted in longer survival for workers, particularly those who died of lung cancer.

Poster Presentation

Psychosocial

0193 ALCOHOL AND OTHER DRUGS AMONG WORKERS: PREVALENCE AND JOB RELATED CONSEQUENCES

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Few data on the use of alcohol and other drugs in workers and possible effects on job performance are available. In 2016 an anonymized questionnaire was distributed among Belgian employees while waiting for a periodical medical examination. AUDIT-C and One Single Questions were used to measure prevalence of substance use. Effects on absenteeism, lost productivity, workplace accidents, conflicts with co-workers and sanctions by employers respectively experienced by the workers and observed among colleagues were investigated.

5367 workers completed the questionnaires. 83% drank at least one standard unit in the 12 months preceding the survey; 7.5% had used cannabis or other illegal drugs, 9.3% hypnotics, 5.5% tranquillizers and 7.9% antidepressants; 11.3% took prescribed drugs for nonmedical reasons. 11.4% of current drinkers had an average consumption of 5 to 6 units a day, which was significantly higher among employees<35 year; 8.5% exhibited binge drinking at least once a week.

39.1% of last year drinkers had an indication of problem drinking and 12.2% experienced consequences on the job. 27.8% observed negative effects among their colleagues, especially being late at work (18.3%), irregular job performances (18%) and absenteeism (15.7%) Due to illicit drug use, 1.2% of the respondents experienced some negative effects on the job, 7.2% observed negative effects among their colleagues. Regarding the use of psychoactive medication, significantly more used by women, this was respectively 3% and 10.7%.

As the negative impact of work related substance use, especially of alcohol, is obvious, a tailored and multicomponent alcohol and drug policy is appropriate.

Poster Presentation

Reproductive Effects

0198 THE CHLORINATED HYDROCARBONS CONTAMINATED GROUNDWATER AND THE REPRODUCTIVE HAZARD

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Our study was to investigate the association between the birth outcome and infant mortality among the community with chlorinated organic contaminated groundwater.

The parents who lived in the area around the factory from1978 to1997were recruited. According to the groundwater hydrogeology, we classified into three areas, factory located as a high-exposure area, the downstream as low-exposure areas, and upstream as reference areas. Analysis with the multiple logistic regression and adjusted for infant sex, parity, maternal marital status, maternal age at birth, maternal education, and maternal occupation, the adjusted odds ratio for preterm delivery among the high-exposure and low-exposure areas. We exclude the population who ever worked in the factory. Associations between the exposure area and adverse birth outcomes were divided into four periods 1978–82, 1983–87, 1988–92, and 1993–97.

For the preterm delivery, the odds ratio for the factory located were1.60 (CI=1.14–2.24) for the period of 1993–1997, 1.67 (CI=1.03–2.71) for the period of 1988–1992 and 1.57 (95% CI=1.07–2.30) for the downstream for the period of 1988–1992. For the low birth weight, the odds ratio for the downstream were1.36 (CI=1.00–1.84) for the period of 1993–1997. The infant mortality have the trend for the

The Chlorinated Hydrocarbons organic solvents contaminated water and the environment could be increased the risk of preterm delivery and the low birth weight. The more evidence need more explore and further studies need to strength the relation.

Oral Presentation

Respiratory

0199 OCCUPATIONAL AND ENVIRONMENTAL RISK FACTORS FOR CHRONIC FIBROSING IDIOPATHIC INTERSTITIAL PNEUMONIA IN SOUTH KOREA

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Background Idiopathic pulmonary fibrosis (IPF) and idiopathic nonspecific interstitial pneumonia (INSIP) have recently been classified together as chronic fibrosing idiopathic interstitial pneumonia (IIP). Occupational and environmental factors are believed to be risk factors for the development of chronic pulmonary fibrosis. Previous case-control studies have suggested that occupational and environmental agents may contribute to the aetiology of IPF, but the association with INSIP has not been examined. Therefore, we aimed to evaluate the association of occupational and environmental agents with chronic fibrosing IIP, including INSIP.

Methods This was a retrospective case-control study performed at a university hospital in South Korea. We recruited patients with chronic fibrosing IIP diagnosed from January 2011 to December 2014 at a respiratory centre at our institute and randomly matched healthy controls who had normal chest X-ray findings by age and gender. Ninety-two chronic fibrosing IIP patients and 92 matched controls were analysed. We used a structured questionnaire to evaluate potential occupational and environmental risk factors for chronic fibrosing IIP, with adjustments for age, smoking, and clinical risk factors.

Results We used conditional logistic regression models to analyse associations with chronic fibrosing IIP adjusted for age, smoking and clinical risk factors. Exposure to stone, sand, or silica significantly increased the risk of chronic fibrosing IIP (odds ratio [OR]=5.01; 95% CI, 1.07–24.21).

Conclusions Our findings indicate that exposure to stone, sand, and silica might constitute a risk factor for developing chronic fibrosing IIP in the Korean population.

Oral Presentation

Exposure Assessment

0200 CREATION OF A QUANTITATIVE HISTORICAL JOB-EXPOSURE MATRIX FOR PLUTONIUM WORKERS AND FEASIBILITY OF ITS USE WITH RECONSTRUCTED OCCUPATIONAL HISTORIES FOR EPIDEMIOLOGICAL PURPOSES

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Introduction The UK Sellafield workforce is important for studying potential health risks of plutonium (Pu) exposure. However, several hundred early workers, employed during the period 1952–63, have been excluded from epidemiological studies because their urinalysis results were insufficiently reliable to provide accurate exposure assessment. This project aimed to develop a job-exposure matrix (JEM) that would enable future inclusion of these workers in epidemiological studies.

Methods 630 plutonium workers without reliable Pu urinalysis data for 1952–63 were identified within fourteen 'homogeneous' plutonium exposure groups. For each job/work location/year, 'exposure analogues' with reliable urinalysis data were identified (n=330). The JEM was based on 4487 work history records and 6899 urinalysis results. Intake assessments were produced using the 'PuMA' plutonium mass assessment code employing the latest conventional assessment methodology.

Results The JEM provided estimates for the median plutonium intake in becquerel (Bq) per year for each job/work location/year combination, and ranged from "no intake" to 175 Bq/yr.