Oral Presentation

Cardiovascular Disease

0344 ISCHAEMIC HEART DISEASE MORTALITY, DIESEL EXHAUST, AND RESPIRABLE PARTICULATE MATTER EXPOSURE IN THE DIESEL EXHAUST IN MINERS STUDY (DEMS)

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We examined the impact of exposure among non-metal miners to respirable elemental carbon (REC), a diesel exhaust surrogate, and respirable particulate matter from mine and ore dust (RPM), on ischaemic heart disease (IHD) mortality in the Diesel Exhaust in Miners Study (DEMS). DEMS was conducted by National Cancer Institute and National Institute for Occupational Safety and Health. Among males at 8 US mines, we estimated IHD mortality hazard ratios (HR) for cumulative exposure and for average intensity to REC and RPM among the 10 070 miners hired since dieselization. In addition, we employed the parametric g-formula to assess the impact of hypothetical REC and RPM interventions on IHD mortality adjusting for time-varying employment status to address healthy worker survivor bias. The HR (95% confidence interval (CI)) for the highest category versus lowest category of exposure were 1.18 (0.56, 2.24) for cumulative REC, 1.25 (0.78, 2.01) for cumulative RPM, 0.75 (0.39, 1.44) for average REC, and 2.58 (1.26, 5.28) for average RPM. Using the parametric g-formula, we estimated the cumulative risk under a hypothetical intervention where annual average daily exposures to REC is set to 0 and a joint intervention consistent with REC and RPM exposure limits of 0 and 0.5 mg/m³ respectively. The ratios comparing the risk under the intervention on REC alone and for the joint intervention, each compared to the observed risk, were 0.86 (0.62, 1.17) and 0.84 (0.71, 0.98) respectively. Our study indicates that exposure to REC and PM may increase IHD mortality among workers in this cohort.

Poster Presentation

Methodology

0345 THE ROLE OF THE OCCUPATIONAL PHYSICIAN IN THE DIAGNOSIS AND PREVENTION OF OCCUPATIONAL DISEASES IN THE 21ST CENTURY

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One of the most important tasks of the occupational physician in Belgium is the prevention of primary and secondary health damage related to the job.

An occupational disease (OD) is a disease that at least partially is caused by risk factors at work or in which the evolution is caused by risk factors in the working environment.

In different countries, the scientific literature about OD and the several registration systems in occupational health generates data about those risk factors responsible for the development of OD.

That data and the legislative framework can lead to preventive measures that can prevent OD, a task for the occupational physician.

In Belgium, the available data about OD, coming from occupational health context, appear to be rare. So to find out more about the incidence and the diagnosis of OD, we will use other existing systems of surveillance in Belgium.

We'll use two sentinel surveillance systems in primary care and one general health care surveillance system. With the use of specific questionnaires about the chosen OD, we search for the risk factors recorded by the attending physicians.

This poster presents you how we used the existing methods in the context of occupational health and explains how the OD and the search for the risk factors are questioned in the general health care surveillance systems.

Dr Bieke Claesen, PhD student University of Antwerp, Occupational Physician at IDEWE.

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Poster Presentation

Psychosocial

0346 RELATIONSHIP BETWEEN PSYCHOLOGICAL STRESS-JOB SATISFACTION AND WEIGHT CHANGE IN EMPLOYEES AT A GLOBAL OIL AND GAS COMPANY

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In an era of uncertainty and falling oil prices, addressing work-related stress plays a vital role in maintaining safe operations, productivity, and decreasing turnover.

Employees have access to a confidential assessment which considers their lifestyle, health status, work and life outside of work. One section of the assessment measures psychological stress and job satisfaction. Psychological stress has been implicated as a risk factor for cardiovascular disease, cancer and weight changes.

This cross-sectional analysis aimed to examine the association between psychological stress, job satisfaction, and weight gain.

Self-administered health risk assessments from over 6000 employees were assessed. Questions about satisfaction with work decisions, job effort reward, time pressures at work, stress from mental fatigue at work were used to create a stress satisfaction score. Prevalence of stress was calculated and multivariate regression analyses, stratified by sex and age groups, were conducted.

Over 70% of respondents who reported stress assigned the cause of stress to be work-related. Female respondents indicated more stress than satisfaction in the workplace (p

value=0.00). Respondents who identified as morbidly obese were 36% more likely to report more stress than satisfaction (p value=0.00); those who identified as underweight were 40% more likely to report more stress than satisfaction at work (p value=0.03).

This analysis shows that certain groups are at higher risk of experiencing more stress than satisfaction at work. This can serve as a baseline to monitor stress levels and changes in employees' weight over time and can help target wellness interventions at the appropriate groups.

Oral Presentation

Risk Assessment

0347 ANALYSIS OF MORTALITY IN A POOLED COHORT OF CANADIAN AND GERMAN URANIUM PROCESSING WORKERS WITH NO MINING EXPERIENCE

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Purpose Long-term health risks of occupational exposures to uranium processing were examined to better understand potential differences with uranium underground miners and nuclear reactor workers.

Methods Two cohort studies of workers from Port Hope, Canada (1950–1999) and Wismut, Germany (1946–2008) employed in uranium milling, refining, and processing were pooled. Poisson regression was used to evaluate the association between cumulative exposures to radon decay products (RDP) and gamma-rays and causes of death potentially related to uranium processing.

Results The pooled cohort included 7431 workers (2 70 201 person-years of follow-up). Mean RDP exposures were lower than in miners while gamma-ray doses were higher than in reactor workers. Both exposures were highly correlated (weighted $r=0.89$). Risks of lung cancer and cardiovascular diseases (CVD) in males were increased but not significant and compatible with risks estimated for miners and reactor workers, respectively. Higher RDP-associated CVD risks were observed for exposures 5–14 years prior to diagnosis compared to later exposures and among those employed <5 years. Risks of solid cancers excluding lung cancer were increased, but not significant, both for males and females, while all other causes of death were not associated with exposures.

Conclusions In the largest study of uranium processing workers to systematically examine radiation risks of multiple outcomes from RDP exposures and gamma-rays, estimated radiation risks were compatible with risks reported for uranium miners and nuclear reactor workers. Continued follow-up and pooling with other cohorts of uranium processing workers are necessary for future comparisons with other workers of the nuclear fuel cycle.

Poster Presentation

Working Conditions

0350 RETURN-TO-WORK FOR MULTIPLE JOBHOLDERS WITH A WORK-RELATED MUSCULOSKELETAL DISORDER: A POPULATION-BASED, MATCHED COHORT IN BRITISH COLUMBIA

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The objective of this study is to examine the association between multiple jobholding and return-to-work (RTW) for workers with a work-related musculoskeletal disorder (MSD). We hypothesise that multiple jobholders (MJHs) are less likely to RTW compared to single jobholders (SJHs), due to their higher sickness absence threshold, more unstable employment contracts, and higher workload.

We used administrative workers' compensation data to identify workers with accepted MSD lost-time claims and an injury date between 2010–2014 in British Columbia, Canada ($n=125,639$ SJHs and 9,029 MJHs). The outcome was time until RTW within one year following the first time-loss day. The MJH and SJH cohorts were balanced using coarsened exact matching, which yielded a matched cohort of 8,992 MJHs and 8,992 SJHs. The outcome was estimated using cox proportional hazard models.

MJHs were less likely to RTW within one year after the first time-loss day compared to SJHs (Hazard Ratio (HR) 0.78; 95% confidence interval (CI) 0.76–0.81). This applied to men and women, but the reduced likelihood to RTW was larger for male MJHs (HR 0.73; 95% CI 0.70–0.77) than for female (HR 0.83; 95% CI 0.79–0.87). Furthermore, this result was stronger for those with $\leq$ five pre-injury weekly workdays (HR 0.76; 95% CI 0.73–0.79), compared to those with six or seven days pre-injury weekly workdays (HR 0.94; 95% CI 0.86–1.02).

MJHs are disadvantaged compared to SJHs in terms of RTW following a work-related MSD. Identifying differences between MJHs and SJHs is the first step to improve RTW outcomes for this vulnerable segment of the workforce.

Poster Presentation

Other

0351 NATIONAL PREVALENCE OF OCCUPATIONAL NOISE EXPOSURE

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Noise-induced hearing loss (NIHL) is common and is one of the major costs to occupational compensation schemes. NIHL can