Abstracts

Oral Presentation

Other

0219 THE SYNERGY EXPOSURE ASSESSMENT STRATEGY

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Objective The use of measurement data in occupational exposure assessment allows more quantitative analyses of possible exposure–response relations. We describe a quantitative exposure assessment approach for the five lung carcinogens selected for the SYNERGY project, that is, asbestos, chromium-VI, nickel, polycyclic aromatic hydrocarbons (by its proxy benzo(a)pyrene (BaP)) and respirable crystalline silica. A quantitative job-exposure matrix (i.e. SYN-JEM) was developed based on statistical modelling of large quantities of personal measurements.

Methods Empirical linear models were developed using personal occupational exposure measurements from Europe and Canada, as well as auxiliary information like job (industry), year of sampling, region, an a priori exposure rating of each job (none, low, and high exposed) and sampling duration. The model outcomes were used to create SYN-JEM with a quantitative estimate of the level of exposure by job, year, and region.

Results Decreasing time trends were observed for all agents between the 1970s and 2009, ranging from -1.2% per year for personal BaP and nickel exposures to -10.7% for asbestos before a ban was implemented. Regional differences in exposure concentrations varied by agent, ranging from a factor 3.3 for chromium-VI up to a factor 10.5 for asbestos.

Conclusion We estimated time-, job-, and region-specific exposure levels for four (asbestos, chromium-VI, nickel, and RCS) out of the five considered lung carcinogens. Statistical modeling of large amounts of personal occupational exposure measurement data enabled the derivation of a quantitative general population JEM, which can be applied to the SYNERGY population.

Oral Presentation

Other

0220 ADVANCING THE PREVENTION OF LONG-TERM SICKNESS ABSENCE: CONSIDERING THE IMPACT OF THE CONTEXT OF LEGISLATION IN EFFECTIVE PREVENTIVE STRATEGIES

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Background Sickness absence is highly prevalent and has a complex multifactorial etiology. A multitude of approaches exist aimed at health, personal, work related and cultural factors. But also the context of legislation has to be addressed when developing, evaluating or implementing preventive interventions.

Aims 1) To substantiate the role of legislation in research on the effect of strategies aimed at reducing long term sickness absence; 2) Elaborate on methodological prerequisites for advancing the evidence base of interventions, focussing on (legal) contextual factors.

Results Role of legislation can be threefold:
1. Direct, as (part of) intervention
2. Indirect, such as changing definitions of sickness absence, or (early) pensioning.
3. Facilitating/hindering factor in implementation of proven interventions

To address the context of legislation, ideally large multinational trials with large sample sizes are needed, requiring substantial resources. An alternative efficient approach might be to combine: 1) Address the impact of contextual (legal) factors by integrating contextual data from (new) trials on the effectiveness of preventive strategies by means of meta regression; 2) Use multi-regional or multi-national databases to compare intervention uptake, outcome and contextual factors in workers (registry data) testing prior hypotheses regarding the impact of legal differences on sickness absence indicators.

Conclusion Large potential gains by reducing long term sickness absence and work disability require innovative but methodologically sound approaches, and should consider the impact of the (legal) context. Enhanced access to multinational data-bases and better reporting of contextual and legal factors related to trials (extension of STROBE, CONSORT) are prerequisites.

Poster Presentation

Other

0223 OCCUPATIONAL HEAT EXPOSURES IN INDUSTRIES AND RENAL HEALTH – FINDINGS FROM INDIA

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Background Heat is an environmental stressor that is increasingly associated with cardiovascular and renal health in occupationally exposed workers. Everyone is exposed to heat in life, but excessive heat exposure is a non-communicable disease that may lead to mortality and morbidity.

Aim The aim of this study was to determine the prevalence of occupational heat exposures and their impact on renal health using the newly developed occupational heat exposure questionnaire (OHEQ) among workers from different industries in India.

Methods This was a cross-sectional study conducted in 2016 among 150 respondents from 15 different industries such as chemical, engineering, oil and gas, furniture, garment, etc. to assess the prevalence of occupational heat exposure and its impact on renal health. A self-administered questionnaire was designed to collect data on the sociodemographic profile of the study population and the OHEQ to assess the exposure status and its association with renal health.

Results The prevalence of exposure to occupational heat was found to be 80% among the respondents. The length of the exposure was found to be significantly associated with the risk of renal health, with a p-value of 0.003.

Conclusion The findings of this study highlight the importance of occupational heat exposure as a risk factor for renal health. Further studies are needed to understand the mechanism of heat exposure on renal health.

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