Withdrawn at the author's request

Oral Presentation

Other

0454

MULTIPLICATIVE TWO-WAY INTERACTIONS BETWEEN OCCUPATIONAL LUNG CARCINOGENS IN THE SYNERGY PROJECT

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Objective The Synergy project derived quantitative exposure-response associations for five occupational lung carcinogens (asbestos, chromium-VI, nickel, polycyclic aromatic hydrocarbons, and respirable crystalline silica) and lung cancer in a pooled analysis of population based case-control studies. Considering a proportion of workers were exposed to more than one of these carcinogens, a joint effect on lung cancer risk is possible.

Methods We estimated joint effects by including an interaction term between two occupational carcinogens in the logistic regression models that were developed for the Synergy project. Analyses were conducted with either both exposures dichotomized (ever vs. never exposed), or with one exposure on a continuous scale (cumulative exposure), and the other dichotomized. Analyses were conducted for all lung cancer subtypes combined and stratified by subtype. We applied a Bonferroni correction.

Results We observed a negative interaction between occupational exposure to nickel and asbestos. The interaction effect was largest for the subtype of squamous cell carcinoma: ratio of odds ratios: 0.76 (95% CI 0.65–0.88), odds ratio of the joint effect: 1.40 (95% CI 1.26–1.56). No other interaction effects were statistically significant after correction for multiple testing. Analyses in which one of the exposures was included on a continuous scale resulted in similar results.

Conclusion We observed little evidence for a statistical multiplicative interaction between most of the occupational carcinogens. The negative multiplicative interaction between asbestos and nickel was not explained by a high correlation between these exposures. Ignoring specific study specific matching criteria might have introduced some bias in the results.

Oral Presentation

Disease Surveillance

0456

INITIAL RESULTS FROM A NEW CANADIAN OCCUPATIONAL DISEASE SURVEILLANCE SYSTEM

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Large scale occupational disease surveillance has been challenging in many countries, with a few notable exceptions, such as the Nordic countries with their substantial record linkage abilities. We present initial results for lung cancer from a new Canadian Occupational Disease Surveillance System.

The surveillance cohort was created using data from Ontario, Canada time-loss workers' compensation claims 1983–2016 (96% for injuries) linked to cancer registry records. Follow-up was from first claim date until diagnosis, death, loss-to-follow-up or 2016. Hazard ratios (HRs) were calculated for each industry/occupation using Cox Proportional Hazard models, adjusted for year of birth and stratified on gender.

The study population was 7 40 000 women and 1,430,000 men. Significant excess risks were observed in many of the a priori suspected occupations and industries, particularly in construction, mining, and transportation occupations. In addition, other relevant associations were observed among both women and men, such as for janitors and cleaners (men: HR=1.22, 95% CI=1.16–1.29, women: HR=1.22, 95% CI=1.13–1.32) and primary metals industry (men: HR=1.18, 95% CI=1.11–1.25, women: HR=1.20, 95% CI=0.89–1.60). Many sex-specific associations were also observed, particularly in women (such as printing and publishing industries: HR=1.42, 95% CI=1.23–1.65 and chemical, rubber and plastic processing occupations HR=1.31, 95% CI=1.15–1.51), which will need further investigation.

The excess risks observed in many a priori suspected groups provides a good confirmation that this study can produce valid results and identify new associations. Triage methods are being developed to target new associations in need of further investigation. Future analyses will use hospital discharge data and outpatient visits.

Poster Presentation

Respiratory

0457

CONSEQUENCES OF ASTHMA ON OCCUPATIONAL AND SOCIO-ECONOMIC CHARACTERISTICS IN THE SIP STUDY

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Objective To study the employment and financial characteristics among asthmatics.

Methods This study was based on the data from the prospective French national representative SIP (Santé et Itinéraire Professionnel) survey. In 2006, 13 648 individuals aged between 20 to 74 years living in metropolitan France were interviewed. In 2010, 11 221 of those who had participated in 2006 accepted to be re-interviewed. The 2006 questionnaire collected occupational and medical histories. Asthma cases were identified by the statement of the subjects at different moments of their medical and occupational histories. The 2010 questionnaire collected the duration of unemployment and that of sickness absences between 2006 and 2010 and the annual income in 2010. The analyses considered the individuals who had completed occupational history. Asthmatic subjects identified in 2006 were compared to the subjects without asthma for employment and financial outcomes between 2006 and 2010.

Results A total of 426 asthmatic subjects were identified in 2006. Due to lost to follow-up, analyses were conducted with 362 asthmatics (138 men and 224 women) and 10 858 non asthmatics. Between 2006 and 2010, the female asthmatics experienced more frequently a period of unemployment and that of sickness absences compared to non asthmatics. They presented lower annual income in 2010. Among males, no significant association was observed.

Conclusions These results suggest that asthmatic women experience rather negative work life events and lower income than non asthmatics. In contrast, no such results were observed in men. These results must be confirmed in future prospective cohort studies.

Poster Presentation

Methodology

0458

SHOULD OCCUPATIONAL EPIDEMIOLOGISTS CONSIDER A NEW PARADIGM? THE OCCUPATIONAL CANCER CASE

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The past decades have been the theatre of intellectual movements in epidemiology. The early 1990s in particular were marked by lively debates about the nature of the discipline and the role it should play in society. In addition to the importance of theory, two major points of controversy concerned on one hand the role denied, assumed or criticised of politics or more generally of ideology in research, on the other hand the nature

of the causal determinism for a disease. Did these controversies have any impact in the occupational health domain?

We review these debates in the light of the current state of research in occupational cancer epidemiology. We aim to illustrate, the questioning, the practices of occupational epidemiologists when inscribed in different in views of the discipline.

We found that research conducted tend to primarily use "reductionist" paradigms and prioritise a deontological ethic (as opposed consequentialist). Occupational health is an issue of power: social, economic and political, crossed by many social dimensions such as social class or gender. Therefore, can occupational epidemiologists afford to neglect work as a social construction? Would it be beneficial for occupational epidemiologists, as suggested in other domains, to move towards a new paradigm or a new ethic?

Oral Presentation

Methodology

0459

PRODUCTIVITY ESTIMATION IN ECONOMIC EVALUATIONS OF OCCUPATIONAL HEALTH AND SAFETY INTERVENTIONS: A SYSTEMATIC REVIEW

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Background OHS interventions increasingly have to demonstrate that they offer good value-for-money. The intervention's effect on productivity gains is thereby essential. However, productivity is not easily measured nor valued, possibly causing employers to underestimate the benefits of OHS programs.

Objectives A systematic review of the measurement and valuation of productivity in economic evaluations of occupational health and safety was conducted, to assess the methodological quality of productivity estimation and the consistency of perspectives used.

Methods Searches were conducted in EMBASE, PUBMED and Cochrane's CENTRAL, between 2007 and December 2016. Two researchers independently reviewed the studies for inclusion. Articles had to be economic evaluations or cost analyses, OHS interventions, aimed at an employed (or return-to-work) population >16 years old and written in English, French, or Dutch. From the included studies, information regarding the general characteristics, inclusion of productivity costs and effects, and methodology of productivity estimation was extracted and analysed.

Results Ninety-two studies were retained. Ninety percent of the studies contrasted intervention costs with absenteeism effects, a third included presenteeism. About half of the studies valued these effects using the human capital approach, twenty-five percent used the friction cost approach. The methodological characteristics were of poor quality in many studies, resulting in a considerable risk of bias. The diversity of studies was also apparent, with studies differing in ten different characteristics concerning the measurement and valuation of productivity. Finally, a new method came into view - direct productivity estimation - that holds a promising alternative to the current standard methods.