Poster Presentation

Cancer

0385 OCCUPATIONAL EXPOSURE TO DIESEL MOTOR EXHAUST AND THE RISK OF CANCER OF THE ORAL CAVITY, PHARYNX AND LARYNX: THE ICARE STUDY

¹Aurélié Géraizime, ¹Christine Barul*, ²Gwenn Menvielle, ³Isabelle Stücker, ¹Danièle Luce. ¹INSERM U1085 – IRSET, Pointe-à-Pitre, France; ²Sorbonne Universités, UPMC Univ Paris 06, INSERM, IPLESP UMRS 1136), Paris, France; ³INSERM U1018 – CESP, Villejuif, France

10.1136/oemed-2017-104636.318

Background Diesel motor exhaust is a recognised risk factor for lung cancer, but few studies have investigated the effect of diesel emissions on other parts of the respiratory tract. We used data from the ICARE study, a French population-based case-control study, to investigate the associations between exposure to diesel motor exhaust and the risk of cancer of the oral cavity, pharynx and larynx.

Methods The analysis was restricted to men and included cases of squamous cell carcinomas of the oral cavity, oropharynx, hypopharynx and larynx (350, 543, 383 and 454 cases, respectively) and 2780 controls. Detailed information on lifetime occupational history, tobacco smoking and alcohol drinking was collected by interview. We assessed occupational exposure to diesel motor exhaust from questionnaire responses. We used logistic regression to estimate odds ratios (OR) and their 95% confidence intervals (CI), adjusted for age, residence area, smoking, alcohol drinking and asbestos exposure.

Results No association was found between exposure to diesel motor exhaust and cancer of the oral cavity (OR=0.88, CI=0.65–1.18), oropharynx (OR=0.83, CI=0.65–1.10), hypopharynx (OR=0.84, CI=0.65–1.18) or larynx (OR=1.11, CI=0.86–1.43). There was no indication of increasing risk with increasing duration of exposure, for any of the cancer sites.

Conclusion These findings do not provide evidence that occupational exposure to diesel motor exhaust increases the risk of oral, pharyngeal or laryngeal cancer.

Oral Presentation

Cardiovascular Disease

0386 OCCUPATIONAL NOISE EXPOSURE AND AMBULATORY BLOOD PRESSURE: THE EXPOSURE RESPONSE RELATION WITH ACUTE AND LAGGED EXPOSURE

¹Zara Ann Stokholm*, ²Kent Lodberg Christensen, ¹Thomas W Frederiksen, ¹Jesper M Vestergaard, ^{3,5}Åse Marie Hansen, ⁴Jens Peter Bonde, ⁵Jesper Kristiansen, ⁵Søren Peter Lund, ¹Henrik A Kolstad. ¹Department of Occupational Medicine, Danish Ramazzini Centre, Aarhus University Hospital, Aarhus, Denmark; ²Department of Internal Medicine and Cardiology A, Aarhus University Hospital, Aarhus, Denmark; ³Faculty of Health, University of Copenhagen, Copenhagen, Denmark; ⁴Department of Occupational and Environmental Medicine, Bispebjerg Hospital, Copenhagen, Denmark; ⁵National Research Centre for the Working Environment, Copenhagen, Denmark

10.1136/oemed-2017-104636.319

Background Long-term environmental noise exposure has repeatedly been related to increased risk of cardiovascular

disease at exposure levels as low as 35 dB(A). Occupational exposure levels are orders of magnitude higher than the environmental levels. We examined if blood pressure was increased during and subsequent to occupational noise exposure.

Methods We studied 483 industrial, finance, and service workers selected as a random sample from 10 industrial trades and financial services between 2009 and 2010. For 24 hours, we recorded noise exposure levels every 5 s by personal dosimeters and measured ambulatory blood pressure and heart rate every 20–30 min. In mixed linear regression models, we assessed the acute and lagged effects of ambient noise exposure (LAEq) on blood pressure and heart rate for work, leisure and night hours. For 319 workers, we estimated these effects for noise exposure at the ear accounting for hearing protection use.

Results Full-shift occupational noise exposure levels ranged between 59–97 dB(A). Results of the regression models adjusted for sex, age, income, BMI, alcohol, tobacco, salt intake, and family history of hypertension suggest no relation between acute or lagged occupational noise exposure level and blood pressure levels for the industrial workers.

Conclusion Occupational noise exposure showed no acute or lagged effects on blood pressure in industrial workers.

Oral Presentation

Cancer

0387 WELDING AND THE RISK OF HEAD AND NECK CANCER: RESULTS FROM THE ICARE STUDY

¹Christine Barul*, ²Mireille Matrat, ²Isabelle Stücker, ¹Danièle Luce. ¹INSERM U1085-IRSET, Pointe-à-Pitre, France; ²INSERM U1018 – CESP, Villejuif, France

10.1136/oemed-2017-104636.320

Objective We used data from the ICARE study, a French population-based case-control study, to investigate the associations between welding and the risk of head and cancer.

Methods The analysis was restricted to men and included 1857 cases of squamous cell carcinomas of the oral cavity, pharynx and larynx and 2780 controls, with detailed information on lifetime occupational history, tobacco smoking and alcohol drinking. A supplementary questionnaire was used to describe welding activities for those welding more than 5% of their working time. Odds-ratios (OR) and 95% confidence intervals (CI) associated with regular and occasional welding were estimated with logistic regression, with adjustment for age, residence area, smoking, alcohol drinking and asbestos exposure.

Results Regular welding was associated with an increased risk of cancer of the larynx (OR=2.68, CI=1.52–4.75), oral cavity (OR=2.30, CI=1.17–4.53) and hypopharynx (OR=1.66, CI=0.83–3.30). No association was found with oropharyngeal cancer (OR=1.05, CI=0.57–1.95). For laryngeal cancer, the OR increased for longer duration of welding (for >10 years: OR=3.13, CI=1.42–6.90). No relationship with duration was observed for the other cancer sites. Preliminary analyses did not reveal marked differences according to the type of metal welded or to welding processes. Occasional welding for more than 10 years was associated with a slight, non-significant elevated risk of oral, laryngeal and hypopharyngeal cancer.

Conclusion Our findings suggest that welding may increase the risk of laryngeal cancer. The evidence is weaker for oral and hypopharyngeal cancer, and we found no evidence of an association with oropharyngeal cancer.

Oral Presentation

Exposure Assessment

0388 POULTRY WORKER TASKS ASSOCIATED WITH CAMPYLOBACTERIOSIS IN MINNESOTA, 2012–2016

¹Evan J Sorley*, ²Carrie A Klumb, ²Joni M Scheffel, ¹Bruce H Alexander, ¹Jeff B Bender, ²Kirk E Smith. ¹Division of Environmental Health Sciences, University of Minnesota, Minneapolis, MN, USA; ²Minnesota Department of Health, St. Paul, MN, USA

10.1136/oemed-2017-104636.321

Background Campylobacteriosis is typically considered a food-borne disease. Poultry workers, however, may be at higher risk due to their close contact with the primary reservoir of *Campylobacter*. The objective of this study was to evaluate whether occupational poultry exposures are associated with campylobacteriosis in Minnesota.

Methods *Campylobacter*, *Salmonella*, *Cryptosporidium*, Shiga toxin-producing *E. coli*, and *Yersinia* infections are reportable to the Minnesota Department of Health. Cases reported during 2012–2016 were interviewed with a standard questionnaire to ascertain potential agriculture exposures. Using the population exposed to agricultural animals, we conducted a case-case comparison study comparing *Campylobacter* infections (cases) to *Cryptosporidium*, Shiga toxin-producing *E. coli*, and *Yersinia* infections (control-cases). These control pathogens were selected because poultry are not their primary reservoir, and thus infections likely came from non-poultry sources.

We determined whether campylobacteriosis was associated with working with poultry, and then if so, with what specific tasks. Odds ratios (OR) with 95% confidence intervals (CI) were calculated as measures of association.

Results Among all animal agriculture workers exposed (504 campylobacteriosis cases and 228 control-cases), campylobacteriosis was associated with working with poultry (OR=2.0; 95% CI: 1.5–2.8). Among poultry workers (276 cases and 86 control-cases), tasks associated with campylobacteriosis included slaughtering (OR=7.4; 95% CI: 1.0–55.4), removing dead birds (OR=7.5; 95% CI: 1.8–31.8), handling manure (OR=4.0; 95% CI: 1.2–13.4), and handling birds' water (OR=2.1; 95% CI: 1.2–3.5).

Conclusions These results support the hypothesis that occupational exposure to poultry increases the risk of campylobacteriosis, and certain poultry-related tasks pose a higher risk of infection than others.

Oral Presentation

Shift Work

0391 ARE WOMEN DOING SHIFT WORK IN PAPER MILLS AT INCREASED RISK FOR MYOCARDIAL INFARCTION?

¹Eva Andersson*, ¹Helena Eriksson, ¹Marianne Andersson, ²Ing-Liss Bryngelsson, ¹Kjell Torén, ³Richard Neitzel. ¹Occupational and Environmental Medicine, Sahlgrenska University Hospital, Göteborg, Sweden; ²Occupational and Environmental Medicine, Örebro University Hospital, Örebro, Sweden; ³Environmental Health Sciences, University of Michigan, Ann Arbor, Michigan, USA

10.1136/oemed-2017-104636.322

Introduction Nurses with long durations of rotating night shifts appear to be at increased risk for coronary heart disease. But industrial shift work among women has not been well-studied.

Methods Women employed more than one year from cohorts of soft paper mills (n=3354) and pulp and paper mills (n=2278) were evaluated in this study. Mill-specific job exposure matrices for shift work and noise exposure were developed at department and job levels. Every worked year was classified for shift work as probable, possible (including shift with no nights) or not likely. Similarly, noise was classified into seven 5 dBA bins <75 dBA to >100 dBA. Here we present the cohort mortality from myocardial infarction for 1969–2013 as standardised mortality ratios (SMRs) with 95% confidence intervals (CI) compared to the general population in Sweden.

Results Fatal myocardial infarctions (n=186) were increased in the cohort of women (SMR 123, 95% CI 106–142). Those classified as probable shift work (n=2399) had an SMR of 129 (98–166) and possible shift work (n=2060) had an SMR of 118 (93–146). Women with >10 years exposure to noise >90 dBA (n=602) had an SMR of 142 (103–192). SMRs declined with lower noise and shorter duration of noise, similar for both types of paper mills.

Conclusions Shift working women in paper mills have an increased mortality from myocardial infarction, but the effect of shift work is difficult to separate from noise exposure. Probable shift work and shorter durations of noise exposure >85 dBA were still associated with elevated SMRs.

Invited

Other

0392 INVITED KEYNOTE: FAST FORWARD EXPOSURE ASSESSMENT: UNDERSTANDING PRECARIY AS A WORK-RELATED RISK IN THE NEW ECONOMY

Noah Seixas*, Trevor Peckham, Anjum Hajat. University of Washington, Seattle, WA, USA

10.1136/oemed-2017-104636.323