

Conclusions The response rate was what was expected for this population and the majority indicated that they report all incidents which suggests that an online information system will be used and provide a valuable resource. With 40% of staff not complete with their Hepatitis B vaccines an information system will allow nurses to track these employees more effectively.

Session: U. Cancer epidemiology III

157 OCCUPATION AND CANCER: AN ALTERNATIVE TOOL FOR EVALUATING THE EVIDENCES

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10.1136/oemed-2013-101717.157

Objectives Meta-analysis and pooled analysis are considered as a gold standard to summarise and to sift the biomedical evidences. In the framework of the Occupational Cancer Monitoring (OCCAM), it was developed a tool to assess the existence of an association between industrial sectors and cancer risk of a specific site so called "Literature Matrix" (LM), storing only positive literature results. The aim of this work is to challenge the adjusted results of this tool with those of meta-analysis studies.

Methods To evaluate the effectiveness of LM to provide useful summary risk estimates, we compared formal meta analyses with the set of "positive" results provided by the matrix. Among the several associations provided in LM, some were selected for present study. For this exploratory study we limited comparisons to 7 areas: agriculture and hematopoietic cancers as a whole, agriculture and non-Hodgkin lymphoma (NHL), agriculture and leukemia, agriculture and multiple myeloma, transports sector and female breast cancer (compared with two different meta-analysis), transports sector and lung cancer and painters and bladder cancer.

Results LM data, after adjustment with trim and fill method, show a substantial agreement with the correspondent meta-analysis, although results driven from LM data tend to an expected overestimation, but in most cases very slight. Results from LM data are always included between the limits of 95% CI of the correspondent meta-analysis, with the exception of Agriculture/NHL and Agriculture/All hematopoietic cancers. Results from LM data not adjusted are constantly farer from meta-analytic results, with the only exception of Painter/Bladder cancer analysis.

Conclusions The collection of only positive results derived from the scientific literature, and the use of an appropriate statistical correction, allows for a useful estimation of cancer risk by site and economic branch and it can be used for interpreting results of surveillance systems and for public health purposes.

158 OCCUPATIONAL EXPOSURE TO CARCINOGENS IN DIFFERENT SUBTYPES OF SINONASAL CANCER. RESULTS FROM 100 CONSECUTIVE HOSPITAL BASED CASES IN ITALY

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10.1136/oemed-2013-101717.158

Objective Sino-nasal cancer (SNC) is a rare and potentially fatal disease with a high occupational attributable fraction, being wood, leather dust, metals and solvents well recognised

carcinogenic agents. The importance of occupational exposure varies across different histological subtypes and is disputed for tumors different from adenocarcinoma (AC). We quantified the etiological role of occupational exposure in a large hospital based cohort.

Methods We systematically evaluate 100 consecutive SNC cases after surgical treatment in Varese Hospital (Feb-2010/Oct-2012) through a standardised and validated questionnaire developed with the National Registry for SNC cases.

Results We evaluated 62 AC, 22 squamous-cell-carcinoma, 16 other (29% women). Mean age at diagnosis was 63. Aprevious occupational exposure was recognised for 59% of cases. The proportion of occupational cases was sensibly higher for AC (83%) than for all other histotypes (19%). For AC the recognized risk factors in the great majority of cases were leather and wood dusts (46% both).

Conversely, for others histotypes different and less common exposures, such as chromium and formaldehyde, resulted more important. In particular we recognised 3 professional cases previously in the photolithographic industry. Mean latency period, 50 years (min 20-max 72), and mean duration of exposure = 26y (min 4-max 54) were similar across histotypes.

Conclusions Occupational exposure plays a key role in the etio-pathogenesis of SNC, not only for AC (with wood and leather dust that confirmed their impact in term of public health) but also for other histotypes with formaldehyde and chromium as important and often misrecognised occupational factors.

159 NEW EPIDEMIOLOGICAL EVIDENCE ON THE HUMAN CARCINOGENIC POTENTIAL OF ACRYLONITRILE EXPOSURE

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10.1136/oemed-2013-101717.159

Objectives Acrylonitrile (AN) is an industrial chemical used in the production of fibres, plastics, synthetic rubbers, resins and pharmaceuticals. AN has been studied extensively in exposed workers and experimental animals, yet many questions remain regarding its carcinogenic potential in humans. In 1999, the International Agency for Research on Cancer (IARC) reclassified AN as a "possible" (Group 2B) human carcinogen based largely on findings from four epidemiological studies. AN is currently under review by the US Environmental Protection Agency and is a candidate for an upcoming IARC re-evaluation.

Methods The University of Pittsburgh, Department of Biostatistics, Center for Occupational Biostatistics and Epidemiology (COBE) is engaged in a series of epidemiology studies designed to advance knowledge regarding the human carcinogenicity of AN exposure. These studies are funded by the AN Group and INEOS Nitriles, Inc. and include:

An update and expansion of an earlier historical cohort study of workers exposed to AN at the Lima, OH production site owned by INEOS Nitriles. This site was one of eight AN production sites studied in the 1990s by the US National Cancer Institute (NCI) and independently studied by COBE in the same time period.

A sensitivity analysis based on the INEOS Lima cohort, designed to adjust lung cancer risks in relation to AN exposure for potential confounding by smoking. While individual-level smoking data are available for most subjects, these data appear to be severely misclassified, rendering them uninformative.

Abstracts

A sensitivity analysis similar to 2, but based on the case-cohort study of lung cancer included in the NCI cohort study.

A pooled analysis of individual-level data from the two existing US historical cohort mortality studies of AN-exposed workers, the NCI cohort and the DuPont Company cohort of two AN production sites.

Results We will report current progress and available results from our series of investigations.

160

PRELIMINARY RESULTS OF A CASE-CONTROL STUDY OF NIGHT SHIFT WORK AND BREAST CANCER AMONG HONG KONG WOMEN

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10.1136/oemed-2013-101717.160

Objectives Breast cancer is the leading cause of cancer morbidity and mortality among women in Hong Kong, and the rate is accelerating. Meanwhile, the prevalence of night shift work in Hong Kong women is also increasing. We aim to present the preliminary results of an ongoing case-control study of breast cancer among Hong Kong women in the EPI-COH 2.0.13.

Methods We are consecutively recruiting all newly diagnosed breast cancer cases and age-matched controls from several hospitals and we expect to collect 1,066 cases and 1,066 controls by the end of 2013. A standardised questionnaire was used to collect information on each participant's lifetime exposure to night shift work, exposure to light at night, sleep disorders, environmental exposures to pesticides and other EDCs, occupational exposures, reproductive and anthropometric factors, smoking, diet, alcohol drinking, family cancer history, etc.

Results We have obtained 350 breast cancer cases and 350 controls with a response rate of 92%. The age distribution at the diagnosis of breast cancer (55.1 ± 11.9 vs. 54.2 ± 14.6 , $p = 0.39$) and the menopause status (61.9% vs. 61.0%, $p = 0.84$) for the cases and controls are comparable. A slightly more controls (92.2%) than the cases (89.9%) are the never smokers. Around 80% cases have records of estrogen receptor (ER) status and 73.3% of them are ER positive, while 52% are positive in progesterone receptor. The proportion of ever exposure of night shift work tends to be low (10%) and this proportion is not significantly higher in cases.

Conclusions This study showed preliminary results regarding the basic characteristics of an ongoing case-control study of breast cancer in Hong Kong women. In addition to patient interview, we have also collected blood samples. We shall be able to present more valuable data in the upcoming EPICOH.

Acknowledgement Research Grants Council, Hong Kong (Project no. 474811).

161

NIGHT-SHIFT WORK AND CHRONIC LYMPHOCYTIC LEUKAEMIA RISK

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10.1136/oemed-2013-101717.161

Objectives Chronic lymphocytic leukaemia (CLL) prognosis has been related to several alterations in the circadian molecular signalling. Other evidences suggest that night work may increase mature B-cell neoplasms risk. Although CLL was considered as an independent diagnostic entity for about a century, it is currently considered a mature B-cell neoplasm subtype. However, no epidemiologic data exists in regard to night work and CLL risk to date. We aim to determine if night work is a risk factor for CLL.

Methods We evaluated 521 cases and 1,511 controls in four areas of Spain within the population-based multi-case-control study MCC-Spain (www.mccspain.org) in collaboration with the International Cancer Genome Consortium of CLL (www.icgc.org). Participants were interviewed face-to-face by trained interviewers for information on socio-demographic factors, reproductive, familial, medical and occupational history, and other lifestyle factors. The occupational section included questions for each job that was held for one year or longer, including shifts, years of debut and end, and amount of hours worked each day. We used logistic regression adjusting for potential confounders.

Results 62 cases (12%) and 154 controls (10%) had at least one permanent night job, and 48 cases (9%) and 178 controls (12%) had worked in a job with four or more nights/month and/or with 20% of the work performed by night. None of these two categories was associated to LLC risk (OR = 0.95 95%CI = 0.68 to 1.34 for permanent night and OR = 0.79 95%CI = 0.55 to 1.15 for rotating night shifts compared to day work, respectively). ORs were higher among subjects working more than 5 years in permanent night shift, but results were not significant.

Conclusions Our data suggest that night work does not play a significant role in CLL aetiology. The interpretation of these results may be hampered by the low sample size exposed to long term night work.

162

USING CARCINOGENIC CLASSIFICATIONS OF PESTICIDES TO EVALUATE THE RISK OF SELECT CANCERS IN CANADIAN MEN

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10.1136/oemed-2013-101717.162

Objective To examine possible associations between exposure to pesticides classified by their carcinogenicity and the risk of select cancers in Canadian men.

Methods Between 1991 and 1994, data were collected in six provinces using paper and telephone questionnaires from cases with incident non-Hodgkin lymphoma (NHL) (N = 513), multiple myeloma (MM) (N = 342), soft tissue sarcoma (STS) (N = 357), and Hodgkin lymphoma (HL) (N = 316) and a random, population-based sample of 1506 age- and province-matched controls. Pesticides were grouped into carcinogenic categories using a composite score created from evaluations by the International Agency for Research on Cancer (IARC) and US Environmental Protection Agency (US EPA). Pesticides were categorised as "probably" carcinogenic (IARC Group 2A and/or US EPA Group B and higher) or "possibly" carcinogenic (IARC Group