

0080 RETROSPECTIVE EXPOSURE ASSESSMENT ON THE PHOTOLITHOGRAPHY PROCESS IN SEMICONDUCTOR MANUFACTURING FACILITY

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Objectives The purpose of this study was to assess potential occupational exposure to chemicals among workers using both qualitative and quantitative information during specific job tasks on the photolithography process of a semiconductor manufacturing facility.

Method Historical exposure measurement data from 1997 to 2012 (n = 1347) were collected and classified by each type of chemical during 8 of 36 job tasks, and hallmark risk assessment was performed to determine control bands by job task of interest using the qualitative information on health hazard, duration of use, quantity, exposure control, etc. Finally, Bayesian Decision Analysis was performed to evaluate potential exposure ratings for those 8 job tasks by combining the prior distribution and likelihood distribution into the posterior distribution.

Results Control bands for 8 job tasks of interest were determined as 1, interpreting that workers use appropriate industrial hygiene, follow recommended job practices, wear personal protective equipment, and install proper ventilation systems. Arithmetic mean and standard deviation for 7 types of chemicals from historical exposure measurement data were 2-heptanone 0.013 ± 0.011 ppm, 1-methoxypropyl-2-acetate 0.163 ± 0.261 ppm, acetone 0.456 ± 0.609 ppm, ethyl 3-ethoxy propionate 0.131 ± 0.106 ppm, ethyl lactate 0.058 ± 0.067 ppm, isopropyl alcohol 0.594 ± 0.923 ppm, and n-butyl acetate 0.071 ± 0.368 ppm, respectively, and all concentrations of chemicals were below 10% of OELs. Therefore, exposure ratings of the 8 job tasks were determined as exposure category 1, indicating that the 95th percentile of exposures infrequently exceed 10% of the OELs.

Conclusions In conclusion, the study findings suggest that potential exposures to chemicals of interest among semiconductor workers for 16 years were very low (below 10% of the OELs) and "highly controlled."

0081 THE ASSOCIATION BETWEEN STATINS USE AND RISK OF HOSPITALIZATION FOR ACUTE HEPATITIS IN PATIENTS WITH HBV INFECTION

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Objectives Statins are commonly used to prevent coronary heart disease and stroke, but they may increase the risk of hepatotoxicity and muscle toxicity. Hepatitis B virus (HBV) infected patients are more susceptible to acute hepatitis. However, the safety of statins use in patients with HBV infection is unclear. The purpose of this study was to investigate the association between statins use and risk of hospitalizations related to acute hepatitis in patients with HBV infection.

Method Our study was a population-based retrospective cohort study. We used a nationwide data of HBV-infected patient from 1999 to 2010 from the Taiwanese National Health Insurance database. Cox proportional hazards regression was used to calculate the hazard ratios (HRs) and 95% CIs for the association between statins use and the occurrence of acute hepatitis in the HBV-infected study cohort.

Results A total of 255 344 HBV-infected patients were included in the study cohort. Of these patients, 127,672 (50%) had used statins, and 283 (0.11%) were diagnosed with acute hepatitis within one year and incident rate of acute hepatitis in patients with HBV infection was 110.9 per 100000 person-years. After controlling for potential confounders, no association of acute hepatitis between statins user and non-statin user was found in different follow-up periods and doses within one year.

Conclusions Among patients with HBV infection, statins use may be not association with acute hepatitis regardless of larger cumulative dose, drug class of statins. Statins given to HBV-infection patients may not associate with severe liver injury.

0082 DIABETES MANAGEMENT AT WORK

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Objectives This study aims to demonstrate the interaction between diabetes and work, but also to identify any difficulties that a diabetic patient can meet at his place of work, which could hinder the daily management of the disease.

Method This is a descriptive, cross-sectional study that was conducted in the month of September 2012 until April 2013. The support for the survey is a pre anonymous self-administered questionnaire, among diabetic patients in employment in various institutions under agreement with the Department of Occupational Medicine of the University Hospital of Sidi Bel-Abbes during their periodic visits.

Results

- The final sample consisted of 83 diabetics with 61.4% men and 38.6% women, the average age of employees is 50 years, 62.6% of our patients are non-insulin-treated, 77.1% are type 2 diabetes, 68.7% for patients work schedules are compatible with meals and taken the treatment, and 65.1% find it difficult to follow the diet to work, 53% reported hypoglycemia at work with variable severity.
- The type of diabetes is strongly linked to hypoglycemia occurred in the workplace and change of occupation ($p = 0.022$, $p = 0.008$)
- Two factors related to the disease: duration of illness affects the occurrence of hypoglycemia ($p = 0.014$) and has a link with the achievement of capillary blood glucose and Modified Work.

Conclusions We have seen with the study, some socio-professional factors and factors related to the disease can occur in diabetes management.

0083 OCCUPATIONAL INJURIES AT THE COMMUNITY LEVEL

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Objectives Low wage and immigrant workers suffer an excess of injuries and are often difficult to reach. There is a need to identify alternative forums for health and safety training. The aim of this study was to determine whether injured workers cluster by geographic area; this would serve as a basis for targeting occupational health and safety interventions at the community level.

Method Work-related injuries from the Illinois Trauma Registry were extracted and mapped by residential zipcode for 2000–2009. Injury data was merged with employment data.

Results There were 23 200 work-related injuries. Of the 1382 zipcodes, 79.3% of the injuries occurred among residents living in 20% of the zipcodes. 21.2% of the work-related injuries (N = 4914) occurred in the 25 zipcodes with the highest counts. We identified six spatial clusters. In the 25 ZIP codes with the highest rates of injuries among employed persons, less than 1% of the injuries occurred in these zipcodes (N = 99).

Conclusions Training at the community level could reduce workplace injury and is needed to augment the void in workplace training. Alternative datasets, not originally designed for occupational surveillance, could be useful for identifying communities with occupational injury and illness clusters. The validity and usefulness of these datasets should be further assessed, and the communities in which these clusters occur should be mapped to identify community level infrastructure that could be leveraged for training interventions. A bridge should be created between occupational medicine, governmental institutions, social work and community advocacy in order to make a community intervention program viable.

0084 A CASE-CONTROL STUDY OF OCCUPATIONAL EXPOSURE TO METALWORKING FLUIDS AND BLADDER CANCER RISK AMONG MEN

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Objectives Metalworking has been associated with bladder cancer risk in many studies. Metalworking fluids (MWFs) are suspected as the putative exposure, but epidemiologic data are limited. Based on state-of-the-art, quantitative exposure assessment, we examined MWF exposure and bladder cancer risk in the New England Bladder Cancer Study.

Method Male cases (n = 895) and population controls (n = 1031) provided occupational histories and information on use of each of three MWF types: (1) straight (mineral oil, additives), (2) soluble (mineral oil, water, additives), and (3) synthetic (water, organics, additives) or semi-synthetic (soluble/synthetic hybrid), in response to exposure-oriented modules administered during personal interviews. We estimated the probability, frequency, and intensity of exposure to each MWF type and, if probability exceeded 50%, cumulative exposure. Logistic regression was used to calculate odds ratios (ORs) and

95% confidence intervals (CIs), adjusting for smoking and other risk factors.

Results Risk was increased for men reporting use of straight MWFs (OR=1.7, 95% CI=1.1–2.8), with a significant trend with increasing cumulative exposure (p = 0.024). Use of soluble MWFs conferred a 50% elevated risk (95% CI=0.96–2.5). ORs were nonsignificantly elevated for synthetic MWFs, based on small numbers. Men who were never metalworkers, but held jobs with possible exposure to mineral oil, had a 40% increased risk (95% CI=1.1–1.8).

Conclusions In the most comprehensive assessment of MWF exposure in a bladder cancer case-control study, exposure to straight MWFs significantly increased bladder cancer risk, as did employment in non-metalworking jobs with possible mineral oil exposure. Our results strengthen prior evidence for mineral oil as a bladder carcinogen.

0085 PSYCHOSOCIAL WORKING ENVIRONMENT FOR PATIENTS WITH ISCHAEMIC HEART DISEASE AND ASSOCIATION TO ADVERSE CARDIAC EVENTS

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Objectives During the last decades a possible association between the psychosocial working environment and increased risk of Ischaemic heart disease (IHD) has been debated. A systematic review from 2009 found moderate evidence that high psychological demands, lack of social support and iso-strain was associated with IHD. Whether the psychosocial working environment plays a role for patients with existing cardiovascular disease on the risk of new cardiac events and readmissions is unknown

Method A cohort of patients under 65 years and treated with Percutaneous Coronary Intervention was established in 2006. Three months after the procedure the patients answered a questionnaire about their psychosocial working environment. A total of 528 patients had returned to work 12 weeks after the procedure, while 97 were still sick-listed. Patients were followed in registers for 3+ years to determine cardiac readmissions and events. We examined the association between psychosocial working environment and adverse events among those who had returned to work at 3 months by Cox Regression analysis.

Results We were not able to detect any significant associations between psychosocial working environment in terms of quantitative and cognitive demands, workload, involvement, influence, tolerance, social support, the combinations of effort-reward and demand-control and the risk of adverse events.

Conclusions Reporting of problems in the psychosocial working environment are not associated with risk of adverse cardiac events. However, tendencies of a lower risk of cardiac event were present for employees reporting the worst psychosocial environment. This unexpected finding may be explained by vulnerable persons not returning to work.