

909

BIOLOGICAL MONITORING OF BENZENE AFTER EXPOSURE TO FRESH CRUDE OIL SPILLED AT SEA IN AN OIL SPILL FIELD TRIAL

¹I Gjesteland*, ^{1,2}BE Hollund, ^{1,2}J Kirkeleit, ³P Daling, ¹M Bråtveit. ¹Department of Global Public Health and Primary Care, Occupational and Environmental Medicine, University of Bergen, Bergen, Norway; ²Department of Occupational Medicine, Haukeland University Hospital, Bergen, Norway; ³Department of Environmental Technology, SINTEF Ocean, Trondheim, Norway

10.1136/oemed-2018-ICOHabstracts.1046

Introduction Oil spill cleanup personnel could be exposed to benzene during cleanup of accidental spill of crude oil at sea. S-Phenyl Mercapturic Acid (SPMA) is reported to be a sensitive urinary marker of exposure to low levels of benzene, but there is a lack of information on biological uptake of benzene during cleanup of oil spills. The aim of this study was to investigate the exposure to benzene during an oil spill by measuring the concentration of SPMA in urine for subjects participating in an oil spill field trial at sea.

Methods The study included 22 subjects taking part in an oil spill field trial in the North Sea with two types of fresh crude oil. The subjects were located in open air sampling boats close to the oil slick (<50 m), on the main deck of two large vessels further from the oil slick (100–200 m), or indoors on the vessel bridge. Urine samples were collected before and after work shift and analysed for S-Phenyl Mercapturic Acid, 1-Hydroxypyrene and cotinine, which are urinary markers of benzene, PAH and tobacco exposure, respectively.

Results SPMA was not detected in the urine samples of subjects wearing protective masks and in the control group. Among the six subjects who reported not to wear protective masks during the spill the concentration of SPMA in urine ranged 0.5–3.3 µmol/mol. They were all located in the boat closest to the oil spill.

Discussion We have previously reported that mean personal exposure to benzene in air was 0.43 ppm for the personnel in the boat closest to the oil spill. The present study suggests that work with fresh oil spilled at sea might cause biological uptake of benzene. Appropriate personal respiratory protection should be used to prevent such uptake.

Occupational Medicine

1063

THE DEVELOPMENT OF AN ALCOHOL SCREENING GUIDELINE FOR OCCUPATIONAL PHYSICIANS

^{1,2}Marie-Claire Lambrechts*, ^{1,3}Lode Godderis. ¹KU Leuven, University of Leuven, Centre Environment and Health, Belgium; ²VAD Flemish centre of expertise on alcohol and other drugs, Brussels, Belgium; ³Idewe, External Service for Prevention and Protection at Work, Heverlee, Belgium

10.1136/oemed-2018-ICOHabstracts.1047

Introduction Screening tools provide occupational physicians the ability to inform employees about their alcohol consumption, and the possibility to take preventive measures. In addition, the occupational physician can detect risky and harmful alcohol use. So far, clear screening guidelines to deal with alcohol misuse in occupational health setting are lacking.

Methods Between June 2016 and March 2017, we organised four World Cafés with a motivated group of occupational physicians. The World Café method is a Large Scale

Intervention and an evidence-based approach in which stakeholders actively participate. The different screening tools were discussed and the guideline was concretized.

Result The Alcohol Use Disorders Identification Test—Consumption (AUDIT-C) was selected as the most adequate and feasible instrument to screen workers. This shortened version of the AUDIT (the first 3 of 10 questions focuses on the consumption of alcohol) is a brief, validated screening instrument for risky drinking and alcohol misuse. The working group advised to organise targeted screening during individual medical examinations (i.e. pre-recruitment medical examination, periodic medical examination, occupational aptitude test, return to work screening and consultations with workers showing deteriorated job performances). We made flowcharts for each type of examination, with an overview of the possible initiatives of occupational physicians based on the score of the screening test, i.e. brief interventions. The guideline also stipulated in which circumstances additional biomarkers are required. Finally, the use of AUDIT-C for health promotion initiatives was concretized. In that case, results will be analysed on a company level and may thus form the basis for prevention measures.

Conclusion This consensus guideline is the first guideline for occupational physicians. It will now be submitted for validation, subsequently followed by its implementation.

1073

SPECIFIC CAUSATION IN OCCUPATIONAL MEDICINE: PROPOSED MODIFICATIONS TO THE DECISION-MAKING PROCESS WITH PRACTICAL APPLICATIONS AND EXAMPLES

¹George Friedman-Jiménez, ²Steven Markowitz. ¹Bellevue/NYU Occupational and Environmental Medicine Clinic, NYU School of Medicine, New York, NY, USA; ²Queens College, City University of NY, Barry Commoner Centre for Health and the Environment, Queens, NY, USA

10.1136/oemed-2018-ICOHabstracts.1048

Introduction The process of determining occupational aetiology of a disease in an individual patient (etiologic diagnosis or Specific Causation) is central to the current practice of occupational medicine. We typically need to determine Specific Causation to assist us in decision-making related to safe return-to-work, prevention of worsening of disease or re-injury of a patient, as well as wage replacement and reimbursement of medical care expenses for patients with disabling diseases potentially of occupational aetiology. Incorrectly attributing or denying occupational causes of disease can each cause serious harm to patients, their families, their employers, coworkers, and society. Potential contributors to inaccurate determination of Specific Causation include diagnostic, toxicologic, mechanistic and exposure-related uncertainties as well as scientific limitations of medicolegal concepts, including the ‘probability of causation’ and ‘more likely than not’ criteria sometimes used in workers’ compensation decision-making. Improving accuracy of determination of Specific Causation is deserving of additional research attention.

Methods We review the current status of causal inference at the individual level in occupational medicine and apply some of the recently developed concepts in causal inference theory from epidemiology and statistics to the decision-making process in clinical occupational medicine.

Results We illustrate with examples of patients with cancer, respiratory disorders or chemical toxicity some of the

limitations of the current decision-making process. We propose some modifications in approach to determination of Specific Causation that may better address issues of multiple additive or interacting causal factors, acceleration of phenotypic expression of a disease, aggravation of pre-existing disease, and challenges of applying medicolegal criteria that do not account for these factors.

Discussion We discuss alternative approaches to Specific Causation that incorporate recent scientific developments in causal inference, explicitly address some of the existing inadequacies, and aim to enable more fair and accurate decision-making with respect to occupational disease causation in individuals.

1087 CHRONIC VEIN DISEASE IN OCCUPATIONAL ENVIRONMENT: WHICH AXES OF PREVENTION?

^{1,2,3}Faiza Bossy. ¹Horizon Sante Travail, Paris, France; ²Ultrasonography, Paris, France; ³Institute Franco Britanique Emergency, Levallois Perret, France

10.1136/oemed-2018-ICOHabstracts.1049

Objectives The venous disease represents a major problem of public health, it is responsible for absenteeism and for hospitalisation. It has an indirect impact on productivity. Nevertheless it probably remains underestimated. The purpose of this epidemiological study is to identify the risk factors of the venous disease and in particular to assess the state of the art on the link between professional postures and the occurrence of disease.

Methods This project is a critical reading. It relies on three sources of data: scientific articles, grey literature and one academic book. The strategy of document retrieval and the analysis of the literature rests on an evaluation guide published by the ANAES.

Results The venous disease is a chronic pathology. The venous disease is multifactorial. Age is the most significant risk factor among all examined components: sex, heredity, and pregnancy. Socio-environmental factors favour the onset of the disease. About the working situations, the prolonged exposure to static standing positions and the trampling are perceived as more constraining than sitting position. Lifting heavy load, warm occupational surrounding and tight clothes increase the complaints of the employees in static position. Alternating different working positions and walking are protective factors of the chronic venous disease.

Conclusion The chronology of the studies spans nearly 50 years. The nature of the work environment, in particular of working conditions, is evolving. Nowadays the static position is more often sitting. The international specific venous disease classification recently created, is widely used by professionals.

This study confirms strong prevalence of the venous disease generally and in particular in occupational environment.

The results contain a clear interest allowing to develop axes of prevention of the venous disease at work.

1230 MEDICAL ASPECTS OF CONTRACTOR GOVERNANCE – AN OIL AND GAS INDUSTRY'S PERSPECTIVE

Syed Zaffar Hussaini*. *Specialist in Occupational Medicine RaGas Company Limited, Doha, State of Qatar*

10.1136/oemed-2018-ICOHabstracts.1050

Introduction The Contractor workforce forms an integral part of any industry. It is necessary to ensure that the Contractor workers are fit to do their job as this would enable companies to minimise the risk of an adverse consequence to the health and/or safety of an employee resulting from a foreseeable health condition.

Methods A cross sectional study was carried out to review the validation and audit of Fitness to work assessments among Contractors working in the company on onshore and offshore locations in order to determine 'key learning related to Medical aspects of Contractor Governance. The data included Fitness assessments conducted between 2011 to 2017.

Results

- Elements of Medical 'Fitness for work' expectations were integrated in the planning stages (into contractor procurement and Contractual agreements).
- The ownership of Contractor employees' health should be the responsibility of the Contractors' company and the contractors should take reasonable care of their own health and safety.
- The benefits of validation and audit of Fitness to work assessments/Safety Critical Task Assessments and successful management of contractor employees with known chronic medical conditions.
- Oil and Gas companies should maintain minimum standards for Offshore Medical Fitness and align with Oil and Gas Industry's best practice approach and make consistent decisions in accordance with stipulated standards.
- The proven advantages of Offshore Medical Fitness cards for employees who are expected to travel and work offshore. This has been a cost effective initiative since it has reduced costs of unnecessary Medical evacuations.

Discussion This study establishes the advantages of better management of Medical Aspects of Contractor Governance which focuses on Contractor employees' health issues related to existing medical conditions and work-life balance which would enable companies to achieve the goal of a 'Safe, Healthy, Happy and Fit workforce'.

1267 IS DRINKING ALCOHOL REALLY USEFUL FOR RELIEVING STRESS?

¹Hirofumi Hibino, ¹Hiroshi Tanaka, ¹Taisuke Tomonaga, ²Seichi Horie. ¹Nippon Steel and Sumitomo Metal Corporation; ²University of Occupational and Environmental Health, Japan

10.1136/oemed-2018-ICOHabstracts.1051

Introduction Workers often drink alcohol for releasing stress. However, many reports show that heavy drinking is a risk of depression. Some mentioned the influence of not only the amount of drinking alcohol but also the wrong way of using alcohol like binge drinking should be examined. Alcohol Use Disorders Identification Test (AUDIT) can evaluate the way of one's using alcohol and the amount of drinking. Thus it is able to examine the more accurate influence of alcohol for depression.

In this study, we analysed the relationship between AUDIT score and depression from work-related stress by The Brief Job Stress Questionnaire (BJSQ).

Methods 4799 workers in a manufacturing company participated in this study. We analysed the data obtained from 4709 male employees without any missing value in logistic analysis and categorised depression as the dependent variable (13:high