

Oral Presentation

Cardiovascular Disease

0354 INCIDENCE OF CARDIOVASCULAR DISEASE AMONG DANISH FIREFIGHTERS – A COHORT STUDY

¹Julie Elbæk Pedersen*, ²Kajsa Petersen, ¹Niels Ebbenhøj, ¹Jens Peter Bonde, ²Johnni Hansen. ¹Department of Occupational and Environmental Medicine, Bispebjerg University Hospital, Copenhagen, Denmark; ²The Danish Cancer Society Research Centre, Copenhagen, Denmark

10.1136/oemed-2017-104636.289

Objectives To explore the incidence of selected diagnoses of cardiovascular diseases (CVD) among 11.691 male Danish firefighters, including the relative risk among different exposure groups.

Methods Trade unions, with firefighter membership records, Danish municipalities and private companies covering firefighting assignments supplied historical employment records to this study. The Supplementary Pension Fund Register, with information on all employees in Denmark, was used to establish two occupational reference groups: a) a random sample from the employed male population and b) the military. Information on CVD, 1977–2014, was retrieved from the Danish National Patient Registry. Age and calendar standardised incidence rates (SIR) were estimated using reference group rates.

Results The number of observed cases significantly exceeded the expected number for all cardiovascular diseases combined when firefighters were compared with both references. Significantly increased SIRs were also observed for angina pectoris (1.16, 95% CI=1.08–1.24), acute myocardial infarction (1.16, 95% CI=1.06–1.26), chronic ischaemic heart disease (1.15, 95% CI=1.06–1.24) and atrial fibrillation/flutter (1.25, 95% CI=1.14–1.36) compared with the general working population sample. When comparing the firefighters with the military, results reflected the same pattern. In subgroup analyses, the risk of CVD was elevated for full-time employed firefighters, but decreased with increasing duration of employment.

Conclusion Our study indicates a modest elevated CVD incidence among Danish firefighters. This study is the first large cohort study exploring the association between firefighting and CVD incidence, and more studies including more detailed information on "dose" of firefighting and potential confounding factors are warranted.

Poster Presentation

Specific Occupations

0355 MORTALITY IN A COHORT OF DANISH FIREFIGHTERS

¹Kajsa Petersen*, ¹Julie Elbæk Pedersen, ²Jens Peter Bonde, ²Niels Ebbenhøj, ¹Johnni Hansen. ¹The Danish Cancer Society Research Centre, Copenhagen, Denmark; ²Department of Occupational and Environmental Medicine, Bispebjerg University Hospital, Copenhagen, Denmark

10.1136/oemed-2017-104636.290

Objective Firefighters are exposed occupationally to a complex range of potential health threats including toxic chemicals, shift work, excessive heat, physical and emotional strain. The

aim of this study is to examine the resulting pattern of mortality among Danish firefighters.

Method Past and present male Danish firefighters were identified through systematic collection of personnel and membership records from employers and trade unions from the entire country (n=11,529). Using the unique Danish personal identification number, information on additional employment, vital status and cause of death was linked to each member of the cohort from the Supplementary Pension Fund Register, the Danish Civil Registration System and the Danish Register of Causes of Death. Standardised mortality ratios (SMRs) were calculated for specific causes of death using rates for two selected reference groups, a sample of the working population and military employees respectively.

Results Compared to both the sample of the working population and the military, overall mortality was significantly reduced among the firefighters (SMR 0.74, 95% CI 0.69–0.78 and SMR 0.87, 95% CI 0.82–0.93). In addition, the SMRs for mental disorders, endocrine disorders, suicides, accidents and other external causes were significantly reduced against both reference groups.

Conclusion Despite possible exposure to numerous occupational hazards, male Danish firefighters have a significantly lower mortality compared to both a sample of the Danish working population and the military.

Poster Presentation

Psychosocial

0356 JOB STRAIN IN MANAGERS AND WORKPLACE SOCIAL CAPITAL: A CROSS-SECTIONAL STUDY FROM THE DANISH PUBLIC SECTOR

Line Leonhardt Laursen*, Søren Grove Vejstrup, Jens Peter Bonde, Johan Høy Jensen. Department of Occupational and Environmental Medicine, Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark

10.1136/oemed-2017-104636.291

Background Research indicates that stressed managers could be harmful for employee wellbeing. Social capital is a construct to address the psychosocial work environment. To our knowledge no study has investigated the relationship between stressed managers and workplace social capital.

Objective This study examines the association between managers' perceived job strain and workplace social capital.

Methods Population includes all employees in the Capital Region of Denmark in 2014 (n=37.720) nested within work units (n=2499). Information on the psychosocial work environment was obtained by a web-based questionnaire (response rate 84%). Work unit managers reported job strain (high job demands/low job control) on a 7-item 5-point Likert scale. Social capital was reported by employees on an 8-item 5–7 point Likert scale and computed to an aggregated work unit score. The risk of employee rated social capital (lowest quartile) according to managers' perceived job strain was examined by logistic regression adjusting for characteristics of managers (gender, age, occupation, seniority) and work units (size (weighted), gender ratio, mean age).

Preliminary results The risk of low work unit social capital increased when the manager reported higher levels of job strain: for each unit increase of job strain (scale 1–5), the

adjusted risk of low work unit social capital increased by OR=1.72, CI 95% 1.65–1.79.

Conclusion Managers' perception of job strain was strongly associated with independently measured workplace social capital. The direction of the causal pathway, if any, may be either way which points to a need for prospective studies and analyses of mediating and/or moderating factors.

Poster Presentation

Musculoskeletal

0357

MULTI-SITE MUSCULOSKELETAL PAIN IN SWEDISH POLICE AND ITS ASSOCIATION WITH USE OF MANDATORY EQUIPMENT

¹Louise Bæk Larsen*, ¹Elisabeth Elgmark Andersson, ²Roy Tranberg, ¹Nerrolyn Ramstrand. ¹Department of rehabilitation, School of Health and Welfare, Jönköping University, Jönköping, Sweden; ²Department of Orthopaedics, Institute of Clinical Sciences, University of Gothenburg, Gothenburg, Sweden

10.1136/oemed-2017-104636.292

Background Musculoskeletal disorders are a common problem among uniformed police with lower back pain being most frequently reported (Gyi and Porter, 1998). Wearing mandatory equipment (duty belt and body armour) and sitting for long periods of time in fleet vehicles are characteristic workload factors linked to musculoskeletal disorders in police (Filtner et al., 2014, Holmes et al., 2013).

Aim The aim of this study was to determine the prevalence of multi-site musculoskeletal pain among Swedish police and to explore the possible association to physical workload factors with a special focus on mandatory equipment.

Method A cross-sectional study was carried out with responses from 4185 uniformed police. Data was collected through a self-administered online survey including questions about work environment, physical workload factors, mandatory equipment and musculoskeletal pain. Multi-site musculoskeletal pain was determined by summing pain sites from four body regions. Binomial logistic regression was performed to explore the association between multi-site musculoskeletal pain and 1) use of mandatory equipment and 2) sitting for long periods in fleet vehicles.

Result The prevalence of multi-site musculoskeletal pain at least one day per week within the previous three months was 41.3%. A statistically significant association was found between multi-site musculoskeletal pain and mandatory equipment whereas sitting for long periods of time in fleet vehicles was not found to be significantly associated to multi-site musculoskeletal pain.

Conclusion Multi-site musculoskeletal pain is a considerable problem among Swedish police and the association to mandatory equipment should therefore be further investigated including psychosocial factors.

Poster Presentation

Exposure Assessment

0358

RHINITIS SYMPTOMS AND IMMUNOLOGICAL RESPONSE AFTER OCCUPATIONAL EXPOSURE TO SHRIMP SHELL POWDER

^{1,2}Björg Eli Hollund*, ^{1,2}Jorunn Kirkeleit, ^{1,2}Cecilie Svanes, ¹Morten Langeland, ^{1,2}Randi Bertelsen. ¹Department of Occupational Medicine, Bergen, Norway; ²University of Bergen, Bergen, Norway

10.1136/oemed-2017-104636.293

Occupational bioaerosol exposure may cause a range of temporary or permanent health effects, depending on host factors and the type and duration of exposure.

In the present study, we investigated rhinitis and immunological markers in all employees in a shrimp shell powder production factory, before and after exposure to shrimp shell powder.

Material and methods The study population comprised 11 employees. Personal exposure to inhalable dust (fullshift) was measured in the breathing zone of the employees during production of shrimp shell powder. All employees answered a self-administered questionnaire before and after exposure, about working tasks, airways symptoms, and smoking habits. Blood samples were collected before and after the work shift, and analysed for leukocyte counts, tryptase, total IgE, IgA, IgM, IgG.

Results Shrimp shell powder workers were exposed to 12 mg/m³ inhalable dust (mean 11.8 mg/m³, median 8.2 mg/m³, n=16), the exposure level for unexposed group was less than 1 mg/m³ inhalable dust (mean 0.4 mg/m³, median 0.4 mg/m³, n=10).

Employees working with shrimp shell powder had more rhinitis symptoms (stuffy nose and runny nose) than employees working with fish.

Although not statistically significant, the peripheral levels of tryptase, leucocytes and neutrophils in peripheral blood appeared to be highest among exposed workers, increasing after exposure.

Conclusions Shrimp shell powder workers are exposed to high level of inhalable dust compared to the occupational exposure limit of organic dust (5 mg/m³).

Exposure was related to more rhinitis symptoms and indicated (non-significantly) higher immunological parameters

Follow-up of this industry and more study is needed.

Oral Presentation

Other

0359

SYSTEMATIC REVIEW OF OCCUPATIONAL CHEMICAL EXPOSURES AND CARDIOVASCULAR DISEASES

¹Christer Hogstedt*, ¹Maria Albin, ²Charlotte Hall, ¹Bengt Sjögren, ^{1,3}Töres Theorell. ¹Karolinska Institutet, Stockholm, Sweden; ²SBU, Stockholm, Sweden; ³Stockholm University, Stockholm, Sweden

10.1136/oemed-2017-104636.294