Oral Presentation

Musculoskeletal

0394 ARE GENDER DIFFERENCES IN DISABILITY DURATION FOR WORK-RELATED MUSCULOSKELETAL INJURIES EXPLAINED BY HEALTH CARE UTILISATION?

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Introduction In British Columbia, Canada, women have longer work disability durations for musculoskeletal injuries than men, even after adjustment for confounders. This study investigated if different types of health care utilisation in the first four weeks of injury explain differences in disability duration.

Methods Three cohorts were identified from compensation claims for back strain, limb fractures and connective tissue injuries. Claims were restricted to at least four-weeks disability for a standard health care utilisation window. Quantile regression investigated the effect of physician visits (log count), physical therapies and prescriptions (yes/no), on disability days (censored at 365) at the 25th, 50th and 75th percentile by gender.

Results In multivariable models, physician visits were associated with shorter disability durations for both genders across injury cohorts. For example, for connective tissue injuries, an increase of one physician visit was associated with 44 fewer days [95% CI -64.8, -23.9] for women and 56 fewer days for men [-74.2, -37.5], at the 75th percentile. Opiate prescriptions were associated with longer disability durations for fractures only, with 39 more days [95% CI 16.1, 61.3] for women and 46 more days [32.1, 59.3] for men, at the 75th percentile. The effect of physical therapies varied by injury and gender.

Discussion Physician visits in the first weeks of a compensation claim may be part of return-to-work procedures associated with shorter disability. Opiate prescriptions in the first weeks of a fracture may be a measure of severity associated with longer disability. Health care utilisation did not readily explain longer disability durations for women.

Poster Presentation

Disease Surveillance

0397 DETECTION OF OCCUPATION INJURY AND ILLNESS THROUGH SURVEILLANCE AT EMERGENCY ROOM AT A MEDICAL CENTRE IN TAINAN, TAIWAN

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Underreporting of occupational injury and illness has been an important issue in Taiwan. We tried to implement an integrated surveillance system in the emergency services of National Cheng Kung University Hospital to screen work-related accidents. The system mobilised staffs of triage, registration and doctors to report occupational causes. A total of 4097 events were identified from Feb 2015 to Feb 2017, among which 2722 were work-related, and 1375 commuting injuries. Work-related events were predominant males (71.7%), but equally in commuting injuries. 1532 events were sent by ambulance, 498 cases hospitalised in the first month, and 4 patients died within 30 days after emergency services and all fatal cases were work-related injuries. The majority of diagnoses were contusions, abrasions and lacerations, totally accounting for 43.1%. However, significant proportion of head injuries (n=751, 18.3%), fractures (n=351, 8.6%), burns (n=264, 6.4%) including 62 cases (1.5%) of chemical burns, and 106 cases (4.4%) of amputations were found. The results were different from the government funded reporting system where most frequently reported were chronic musculoskeletal diseases. The total medical costs were about 2.9 million USD, based on a conservative estimation accounting 90 days from the first encounter. This study revealed the fact of underestimation of occupational injuries and illness resulting in significant health and societal impacts. The emergency room based surveillance system can augment the conventional reporting system. Furthermore, cluster analysis and work associated disability should be investigated to improve occupational safety and labour right.

Oral Presentation

Working Conditions

0398 CLIMATE CHANGE THREATS TO OCCUPATIONAL HEALTH AND PRODUCTIVITY AT POPULATION LEVEL

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Climate change will cause increasing environmental heat levels in large parts of the world. The heat levels for millions of people working outdoors or indoors without air conditioning, particularly in tropical areas, are already so high that physiological limits are exceeded and health risks and productivity loss occurs.

Using data on climate and working population size for 67,000 geographic grid cells (size = 0.5 × 0.5 degrees) based on internationally refereed sources we produced global heat stress maps for different calendar months and time periods. We combine these estimates with exposure-response relationships for heat stress indices to calculate heat strain risks and work capacity loss at global, regional and country level. The physiological laboratory evidence concerning heat impacts on workers is extensive, but more quantitative epidemiological studies are needed to improve risk assessments of occupational health risks due to climate change.

For example, we calculated that the global number of people subjected to extremely high monthly average heat levels (WBGT > 30°C, when even moderate work is restrained)

during the hottest month may rise to over 400 million at the end of this century from the current value of less than 1 million. At country level we find up to 2–4% of current daylight work hours are too hot for almost any work at moderate intensity. Our impact assessment model incorporates climate conditions, location of work (in sun, in shade or indoors), work intensity, and age distribution of the local population. Further developments of the model will be discussed.

Poster Presentation

Occupational Medicine (SCOM/Modernet)

0399 INDIVIDUAL SENSITIVITY. HOW SHOULD OCCUPATIONAL HEALTH RESPOND? (SUBMITTED FOR THE SCOM DAY)

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The requirement for occupational radiation doses to be As Low As Reasonably Achievable (ALARA), promulgated by the International Commission on Radiation Protection in 1977, transformed radiation protection practice. It also led the way to develop similar standards for a range of occupational hazards.

The radiation world is now increasingly recognising the relevance of individual sensitivity to ionising radiations, with the real prospect that this will be incorporated into future occupational protection standards. The key drivers are;

- a. Known genetic sensitivity, and gene testing is feasible.
- b. Radiation risk relates to general cancer risk, including lifestyle.
- c. Some specific risks may be much higher in human subgroups.

Individual sensitivity to other occupational hazards is well established, but little acknowledged. Genetic factors are linked to a wide range of occupational diseases, including those from physical, chemical, biological and even psychological exposures. In relation to lifestyle, there is a synergy between the more than additive effects of radon and asbestos when either is linked with cigarette smoke. We are also aware high occupational risk in subgroups, for example; Type 1 hypersensitivity to Latex being almost exclusively restricted to the strongly atopic.

The ethical, scientific and practical difficulties of standards based on individual sensitivity are huge, with the strong possibility that restricting consideration to radiation induced cancer would not provide a model that is relevant throughout occupational health. It is suggested that ICOH should seek to join with ICRP in setting up a system to look at the issue in its entirety.

Oral Presentation

Cancer

0400 OCCUPATIONAL AND ENVIRONMENTAL RISK FACTORS FOR PROSTATE CANCER IN HONG KONG

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Objectives Influence of environmental exposures on prostate cancer remains largely unclear. We aimed to document the associations of occupational and environmental risk factors with prostate cancer in Hong Kong using a case-control study.

Methods We consecutively recruited 431 incident prostate cancer cases and 402 controls to obtain information on occupational and environmental exposures using a standard questionnaire, including smoking, dietary habits, family cancer history, night shift work, use of detergents and pesticide, and lifetime usage of food containers. We developed a new assessment tool of environmental BPA exposure and created a novel cumulative BPA exposure index (CBPAI). Odds ratio and 95% confidence interval (95% CI) was performed using multiple logistic regression analysis.

Results Family history of prostate cancer was more common in cases (9.5%) than controls (3.0%), showing an adjusted OR of 3.68 (95% CI: 1.85–7.34). Weekly consumption of deep fried food and picked vegetable was associated with an excessive prostate cancer risk by 85% (95% CI: 15%–195%) and 87% (7%–228%). Night shift work was hazardous (OR=1.76, 95% CI: 1.07–2.89) but habitual green tea drinking was protective (OR=0.56, 95% CI: 0.34–0.91). A positive exposure-response relationship with CPBAI and prostate cancer was observed.

Conclusions This study demonstrated an overall picture of occupational and environmental risk factors to prostate cancer among Hong Kong Chinese men. Furthermore, this study provided the first epidemiological evidence on carcinogenicity of BPA on human prostate thus added breakthrough data into the literature.

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