06E.6 OCCUPATIONAL EXPOSURES AND ALS: INTERNATIONAL COLLABORATIONS AND NEW WAYS TO IDENTIFY RISK FACTORS

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Background Associations between occupational exposures and amyotrophic lateral sclerosis (ALS) have been suggested, but results are inconsistent. Case-control studies are best suited for inclusion of clinically confirmed incident cases, but prone to recall bias. Cohort studies are free from recall bias and may have pre-symptomatic blood stored, to inform about exposures (e.g. lead) well before disease onset.

Methods An ongoing nation-wide ALS case-control study has been conducted in the Netherlands since 2006 (currently over 3000 cases and 4500 controls) to study risk factors and possible gene-environment interactions. Part of this study has been pooled with case-control studies from Ireland and Italy (Euro-MOTOR), where the same questionnaire was administered.

Results Within the Euro-MOTOR study, ~1300 cases and ~2600 controls had full job histories available. Occupational exposures to a range of agents were assessed using job-exposure matrices. Analyses were adjusted for age, sex, centre, education, smoking and alcohol. We found significant associations between ALS and exposure to silica (OR 1.73, 95% CI 1.28–2.33), extremely low-frequency magnetic fields (OR 1.16, 95% CI 1.01–1.33) and electric shocks (OR 1.23, 95% CI 1.05–1.43), independent of the other occupational exposures studied.

Future perspectives A nested ALS case-control study was conducted within the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort. 219 people who died from ALS have been identified, and pre-symptomatic blood samples from 168 of these cases are available for analyses. Three controls per case were selected by incidence density sampling matched by age at recruitment, sex and study centre. Metal concentrations will be analysed in the erythrocytes. This would be the first prospective study on the association between exposure to metals and ALS.

Conclusion Each study design has its strengths and weaknesses, and ALS should be investigated in a range of (occupational) studies to gain better understanding of its aetiology.

Injuries

07A.1 ABSTRACT WITHDRAWN

07A.2 GENDER, IMMIGRATION STATUS, AND WORK DISABILITY FOR ACUTE INJURIES

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Background The nature of work is changing rapidly with precarious work emerging as an occupational health issue. Both

immigration status and gender are associated with precarious work and health inequalities. This paper investigated the modifying effect of gender on the relationship between immigration status and work disability duration for acute injuries in the Canadian context.

Methods Workers in the Canadian jurisdiction of British Columbia with a workers' compensation claim from 1995 to 2012 were linked to immigration data (n=8 83 830 claims), and categorized as recent (<10 years, 6.7%) or established immigrants (10+years, 4.0%), versus Canadian-born (89.3%). Work disability days one-year post-injury were modeled using quantile regression, adjusted for confounders and stratified by gender (29.6% women). The analyses was restricted to fractures (n=55 324 claims, 19.4% women), a 'visible' injury with a prescribed treatment trajectory within a public health care system.

Results Disability duration for a work-related fracture was significantly longer for immigrant workers compared to Canadian-born workers regardless of immigration timing or gender, across the disability distribution: 7 to 10 days longer at the 25th percentile [e.g. recent immigrant women 10.4 [95% CI 5.6, 15.2] and men 8.9 days [6.8, 10.9]]; 12 to 15 days longer at the 50th percentile [e.g. recent immigrant women 15.3 [8.0, 22.7] and men 15.6 [12.5, 18.8]]; and 22 to 26 days longer at the 75th percentile [e.g. established immigrant women 22.5 [9.4, 35.8] and men 21.9 [13.4–30.3]].

Discussion Longer disabilities durations for fractures suggest that health inequalities and work vulnerabilities for immigrant workers are not readily explained by subjective injury characteristics or variability in clinical treatment guidelines. The current findings informed two research initiatives to investigate precarious employment on worker health, and to identify policy levers to mitigate inequalities.

07A.3 CREATING SAFER WORKPLACES: LEARNING FROM WORK-RELATED FATAL INJURY IN NEW ZEALAND

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Background NZ's workplace fatality record is high compared to similar countries, with a rate twice that of Australia and four times that of the UK. The reasons for NZ's substandard performance are highly debated, and in-depth analysis to inform this debate is limited by a dearth of detailed fatality data. This study aims to inform work-related injury prevention efforts for NZ by: i) enumerating the fatal injury burden; and ii) identifying high risk groups and circumstances to prioritise and target preventive action.

Methods A dataset spanning forty-years of Coronial records was created by collecting data for the period 1995–2014 and appending this to existing data for 1975–1994. Data collection involved: 1) identifying possible cases aged 0–84 years from mortality records using injury external cause codes, 2) linking these to Coronial records 3) retrieving and reviewing records