



THE SELECTED ABSTRACTS

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486 Occupational exposures and Amyotrophic Lateral Sclerosis mortality in a large prospective cohort

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Abstract

Objectives: This study aims to study multiple occupational exposures and their possible associations with Amyotrophic Lateral Sclerosis (ALS) mortality within the Netherlands Cohort Study (NLCS).

Methods: For this case-cohort analysis, 120,852 persons aged 55 to 69 years at time of enrollment in 1986 were followed up (17.3 yrs) for ALS mortality through linkage with Statistics Netherlands. Information on occupational history and potential confounders such as sex, age, smoking, alcohol use, BMI, physical activity and educational level were collected at baseline through a self-administered questionnaire.

Occupations were coded using the International Standard Classification of Occupations (ISCO-88).

Occupational exposures were assigned through several job-exposure matrices (JEMs): ALOHA-JEM (solvents, pesticides), DOM-JEM (diesel exhaust, metals), an extremely low frequency magnetic fields (ELF-MF)-JEM and an electrical shock-JEM. Assigned exposure levels were ordinal (background or no exposure, low exposure, high exposure). Exposure measures included 'ever exposure' (ever had a job with high or low exposure) and cumulative exposure. Associations between occupational exposures and ALS mortality were analyzed separately for men and women, using Cox-regression. Hazard ratios (HR) and 95% confidence intervals (CI) were estimated using attained age as underlying time scale.

Results: 79 cases of ALS were identified in men and 62 in women. In men, ever a job with ELF-MF exposure versus background showed an association with ALS-mortality (ever low HR: 1.51 (95% CI 0.93 - 2.45); ever high HR: 1.95 (95% CI 0.92 - 4.16), and an exposure-response relationship in cumulative exposure (HR third tertile of exposed: 1.87 (95% CI 1.04 - 3.33). Exposure to solvents also showed some significant associations, but no clear exposure-response relationship. Including exposure to electrical shocks or chlorinated solvents into the model only marginally changed the association between ELF-MF and ALS mortality.

Conclusions: Of the occupational exposures analyzed in this study, only occupational ELF-MF exposure showed a consistent association with ALS mortality.