Oral Presentation

Risk Assessment

0362   **RISK OF PLEURAL MM AND RESIDUAL ASBESTOS BURDEN IN THE LUNG: A RETROSPECTIVE CASE-CONTROL STUDY**

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Introduction Results of Malignant Pleural Mesothelioma (MPM) occurrence (mortality and incidence) by cumulative exposure dose clearly showed a proportional relation of MPM risk with dose, confirmed among studies by fibre burden. We evaluated the association between residual fibre content and MPM risk by circumstance of asbestos exposure.

Methods and materials Lung samples obtained from pleuro-pneumonectomies or autopsies (349 MPMs, and 41 controls) among subjects investigated for probability and circumstance of asbestos exposure were examined through Scanning Electron Microscopy; 291 cases had an occupational asbestos exposure, 38 MPMs a non-occupational exposure (familiar or environmental), whereas among 20 MPM an asbestos exposure was not identified. The MPM risk was evaluated by means of Odds Ratio (OR).

Results The residual asbestos fibre burden was higher among MPMs occupationally exposed (Geometric Mean:2.10 Million fibres/gram of dried tissue; 95% CI:1.5–2.58) in comparison with non-occupational (GM:0.66 Mff/gdt; 95% CI:0.47–0.95) or with unknown exposures (GM:0.59 Mff/gdt; 95% CI:0.34–1.03) and controls (GM:0.26 Mff/gdt; 95% CI:0.20–0.34). Among occupationally exposed, the MPM risk increased according to the asbestos fibre burden reaching an OR of 36.8 (95%CI:11.9–113.5) for concentrations higher than 1 Mff/g dt, compared to the reference level (<0.25 Mff/gdt). Higher ORs were observed at any concentration of amphibole fibres in comparison those for chrysotile fibres.

Conclusions The MPM risk was strongly associated to the residual asbestos fibre lung burden. The MPM risk due to non-occupational exposure shows a magnitude comparable with that with unknown asbestos exposures. The residual lung burden of chrysotile is strongly influenced by clearance and time since exposures ceased.

Oral Presentation

Other

0363   **OCCUPATIONAL EXPOSURE TO HIGH FREQUENCY ELECTROMAGNETIC FIELDS AND RISK OF BRAIN TUMOURS IN THE INTEROCC STUDY**

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Introduction The International Agency for Research on Cancer classified radiofrequency (RF) electromagnetic fields (EMF) as *possibly carcinogenic* based on limited evidence in human studies of cell phone use and in animal experiments, while occupational evidence was found *inadequate* due in part to limitations in exposure assessment. This study assesses possible associations between occupational exposure to RF or inter-mediate frequency (IF) EMF in INTEROCC participants using novel exposure assessment methodologies.

Methods A plausible index of cumulative exposure to RF and IF EMF was calculated using a source-exposure matrix and detailed interviews on work with or nearby EMF sources, both overall and in specific exposure time windows. Conditional logistic regression was used to investigate associations with glioma and meningioma risk.

Results Only ~10% (n=769) of participants (n=7,330) were ever exposed to RF and ~1% (n=44) to IF EMF sources. Overall, there was no positive association between exposure to