Day 2: Thursday, September 8, 2011

Poster-discussion: Methodology 1

P63 USEFULNESS OF SENSITIVITY ANALYSES: EXAMPLES FROM A CASE-CONTROL STUDY OF OCCUPATIONAL EXPOSURES AND POSTMENOPAUSAL BREAST CANCER

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Objectives This paper presents sensitivity analyses of the main results of a case-control study on occupational exposures and the risk of developing postmenopausal breast cancer.

Methods A previous analysis of our study conducted in Montreal between 1996 and 1997 showed elevated risks with occupational exposures to mono-aromatic hydrocarbons (MAHs), to PAHs, to organic solvents with reactive metabolites, and to acrylic and other synthetic fibres. Sensitivity analyses were performed by excluding certain control cancer sites based on mechanistic considerations, adjusting for co-exposures and estimating exposure-response relationships and windows of exposures.

Results After excluding hormonal cancers from the control series, the ORs increased slightly with exposures to certain agents hypothesised to behave similarly to estrogens, consistent with a mechanism related to exposure to xenoestrogens. Adjustment for co-exposure to other fibres did not modify the risk associated with acrylic fibres: a monotonic gradient was discernible, but did not reach statistical significance. Refinement of windows of exposure gave results consistent with the hypothesis of sensitivity of breast tissue before age 36 years or before the first full-time pregnancy.

Conclusions The associations did not change substantially after this sensitivity analysis, which adds some support to the finding of increased risks of postmenopausal breast cancer associated with these occupational exposures. Some of these exposures may be markers for other exposures or for complex mixtures in the occupational environment; for example, associations with fibres may be related to dusts and vapours in the environment that may include oils, biocides, and other compounds used in the textile industry.