Poster-discussion: Shiftwork

P73 THE INFLUENCE OF SHIFT WORK AND LIGHT AT NIGHT EXPOSURE ON MELATONIN LEVELS AND BREAST CANCER RISK

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Objectives Work at night has been identified as a risk factor for several cancer sites, and melatonin, a hormone that follows a circadian rhythm, has been proposed as an intermediate in this relationship. The purpose of this research was to examine the association between shift work duration and breast cancer risk and to explore the relationship of proposed intermediates (light and melatonin) in the causal pathway, using data from two distinct study populations.

Methods A breast cancer case-control study that included measures of lifetime employment history, with 1061 cases and 1015 controls from Vancouver, British Columbia was employed to determine the effect of shift work exposure on breast cancer risk. A separate biomarker study of 123 female nurses working rotating shifts (2 days, two nights, 5 days off) investigated the associations between light at night exposure and melatonin.

Nurses wore light data loggers and provided two urine and four saliva samples for melatonin assessment while on their day and night shifts.

Results In the case-control study, 34% of subjects had ever been employed in shift work, and risk of breast cancer associated with shift work history will be presented. In the biomarker study, a small inverse association was seen between light and change in melatonin levels among nurses working at night (p=0.04).

Conclusions This research contributes to the body of evidence concerning the hypothesised relationship between shift work history and cancer risk and one of the mechanistic causal pathways, which will help to inform further research and workplace policy.