

P78

NIGHT SHIFT WORK AND ANTIOXIDANT ENZYMES ACTIVITY IN NURSES AND MIDWIVES – PRELIMINARY RESULTS

Agnieszka Bukowska, Jolanta Gromadzinska, Wojciech Sobala, Edyta Reszka, Wojciech Wasowicz, Beata Peplonska *Nofer Institute, Lodz, Poland*

10.1136/oemed-2011-100382.292

Objectives It has been hypothesised that night shift work might increase oxidative stress. To date, the data on oxidative stress biomarkers in night shift workers are sparse. The aim of our study was to evaluate the association between night shift work and important antioxidant enzymes activity: superoxide dismutase 1 (SOD1), cellular glutathione peroxidase 1 (GPx1) and extracellular glutathione peroxidase 3 (GPx3).

Methods The cross-sectional study included 355 nurses and midwives currently working on rotating night-shifts and 370 nurses and midwives working during the day. Enzyme activities were measured in the morning blood samples using kinetics methods. Associations between current employment and SOD1, GPx1, and GPx3 were estimated by multiple linear regression models. Potential modification by menopausal status was analysed.

Results No differences in SOD1 activity were found between women working on night shift and day nurses. Activity of GPx1 was significantly higher in the group of night shift nurses than day nurses (geometric means(GM): 21.8 u/g Hb vs 20.7 u/g Hb; $p=0.001$). Menopausal status modified the association between night shift work and GPx3, with lower GPx3 activity in postmenopausal night shift nurses when compared to day nurses (0.188 u/ml vs 0.196 u/ml; $p=0.021$), and opposite association seen in premenopausal women (0.196 u/ml vs 0.188 u/ml; $p=0.006$). Significant relationship between night shifts frequency GPx3 and GPx1 was found.

Conclusions Preliminary results of our study suggests that night shift work might modify antioxidant enzymes activity.