

enzymes activity, although, these observations has not been examined in humans yet. The aim of our study was to evaluate the association between concentration of melatonin metabolite (MT6s) and antioxidant enzymes activity: superoxide dismutase 1 (SOD1), cellular glutathione peroxidase 1 (GPx1) and extracellular glutathione peroxidase 3 (GPx3).

Methods The cross-sectional study included 725 nurses and midwives. Enzymes activities were measured in the morning blood samples using kinetics methods. Melatonin metabolite (6-sulfatoxymelatonin) concentration in the morning urine samples was evaluated with ELISA assay method and adjusted for creatinine. Associations between MT6s concentration and SOD1, GPx1, and GPx3 activity were estimated by multiple linear regression models. Potential modification of the associations by current night shift work status was examined.

Results No significant associations between MT6s concentration, GPx1, GPx3 and SOD1 activity were found (coef=-0.07, $p=0.76$; coef=0.0009, $p=0.55$; coef=-0.027, $p=0.72$ respectively), both in the total population as well as in the categories of day nurses and women working on night shifts.

Conclusions Preliminary results of our study do not support previous findings in the experimental studies on association between melatonin and antioxidant enzymes activity.

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6-SULFATOXYMELATONIN AND ANTIOXIDANT ENZYMES ACTIVITY IN NURSES AND MIDWIVES – PRELIMINARY RESULTS

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Objectives Exposure to light at night might decrease secretion of melatonin in night shift workers. Experimental studies in animals have shown that melatonin might increase antioxidant