

P185. LIPID PEROXIDATION AND DNA DAMAGE IN PLASTIC WORKERS

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Phthalates are added to polyvinyl (PVC) plastics in order to soften and give shape. PVC plastics are usually used in plumbing pipes and guttering, shower curtains, window frames, flooring and carpeting. Plastic industry offers services to a range of industries, including aerospace, building, construction, home flooring and carpeting products, electronics, packaging, and transportation. The main aim of the present work is to determine the lipid peroxidation and DNA damage in plastic workers (mean age: 30.71 ± 2.41 years, $n=24$), who were exposed to phthalates [mainly di(2-ethylhexyl) phthalate] in their workplace. Control group consisted of 29 men with a mean age of 35.86 ± 1.67 years. The mean working period of the plastic workers was 8.17 years. Lipid peroxidation was assessed by measuring urinary F2-isoprostane levels. DNA damage was evaluated by measuring plasma 8-hydroxydeoxyguanosine (8-OHdG) levels. Urinary F2-isoprostane levels of plastic workers (5.15 ± 0.52 ng/ml) were not significantly higher than control (5.05 ± 0.52 ng/ml). However, plasma 8-OHdG levels increased significantly in plastic workers (0.01 ± 0.002 ng/ml) vs. control (0.14 ± 0.06 ng/ml). The urinary F2-isoprostane levels and plasma 8-OHdG levels were positively correlated and the correlation was statistically significant in the plastic workers ($\rho=0.413$, $p<0.05$). Our results show that plastic workers have high levels of DNA damage when compared to control, possibly due to the oxidative damage caused by phthalate exposure. More studies are needed to show the antioxidant/oxidant imbalance in plastic workers.

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