Abstract

The aim of this study was to evaluate oxidative stress in workers who formulate organophosphate, synthetic pyrethroid and carbamate pesticides. In this survey, blood erythrocytes from a group of 94 pesticide-formulating workers (at least 5-years experience in pest-control in apple and cherry production) and 45 control subjects were examined for oxidative stress parameters. The control group was composed of 45 healthy people living in the same region with no exposure to pesticides. Lipid peroxidation level, catalase, superoxide dismutase and glutathione peroxidase activities in erythrocytes were analysed as biomarkers of oxidative stress. In addition, the acetylcholinesterase activity was measured as a biomarker of toxicity. Results indicated that chronic exposure to organophosphate, synthetic pyrethroid and carbamate pesticides were associated with increased activities of catalase, SOD and lipid peroxidation in erythrocytes (p < 0.05). Acetylcholinesterase activity did not show any significant differences between the two groups (p > 0.05). It is concluded that human chronic exposure to pesticides may result in stimulated antioxidant enzymes.