Sub-chronic exposure to chlorpyrifos induces hematological, metabolic disorders and oxidative stress in rat: Attenuation by glutathione

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Abstract:

The current work aimed to investigate the different toxic effects of chlorpyrifos (CPF) in subchronic exposure. Two groups of Sprague-Dawley male rats were exposed to CPF alone in a dose of 30 mg/kg body weight, or CPF dose as previous plus glutathione (GSH) in a dose of 100 mg/kg body weight, for 90 days, twice weekly, orally. Another two groups of rat were given corn oil (control) or GSH. There is a significant decrease in hemoglobin concentration, haematocrit percentage, thrombocytic indices, total protein and albumin levels in CPF-exposed group. CPF induced hyperglycemia and significant increase in total cholesterol, but a significant decrease in triglyceride levels was obtained. A significant increase in the levels of lipid peroxidation was obtained while a significant decrease of the total antioxidant was recorded. The decrease in glycogen content and some histopathological changes were observed in liver after CPF exposure. Furthermore, co-administration of GSH can restore some of these alterations.

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