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CARDIO-PROTECTIVE EFFECT OF N-ACETYL CYSTEINE IN SUB CHRONIC EXPOSURE OF MALATHION IN WISTAR RATS

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ABSTRACT

The aim of the present study was to examine the involvement of reactive oxygen species (ROS) in cardio toxicity caused by subchronic malathion poisoning. The protective role and mechanism of N-acetyl cysteine (NAC), in ameliorating malathion-induced oxidative stress was evaluated. This was a 28 day study. Animals were treated with malathion 75 mg/kg (1/12 LD₅₀) i.p for 28 days. Another group was treated with NAC 150 mg/kg i.p followed by malathion. A standard group treated with Vitamin C 100mg/kg/i.p. followed by malathion was kept as positive control. Oxidative stress induced by malathion was evaluated by superoxide dismutase (SOD) assay, Catalase (CAT) assay and malondialdehyde (MDA) level in heart. Sub chronic malathion intoxication caused oxidative stress was evident from increase in SOD, CAT and MDA level in heart. Histopathological evaluation of heart showed that sub chronic intoxication caused granular degeneration in heart muscle cells and severe myocytolysis. Pretreatment with NAC significantly reduced oxidative stress in heart. N-Acetyl cysteine after malathion intoxication produced only mild myocytolysis. The protective effect of NAC may be due to its antioxidant nature. In view of the experimental results obtained N-Acetyl cysteine may be considered as promising agent for the prophylaxis of malathion exposed toxic effects in heart.

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