The Effect of Vitamin "E" on the Peripheral Neurotoxicity of Antimony in Adult Male Albino Rat

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Abstract : The present work was planned with the aim to study the histological changes that might occur in the sciatic nerve of adult male albino rat following antimony trioxide exposure and to throw more light on the protective role of vitamin "E" on the peripheral neurotoxicity induced by this environmental toxin Sixty adult male albino rats, weighing 183 - 235 grams, were utilized in this work. The animals were divided into 3 groups; each of 20 rats: animals of group I served as control, animals of group II received antimony trioxide daily for 12 successive weeks, animals of group III received antimony trioxide and vitamin "E" daily for the same duration. Antimony trioxide was given in a daily dose of 500 mg/ kg body weight which represents 1/40 of the known LD50 and vitamin "E" was administered in a daily dose of 300 mg/kg body weight. Both antimony trioxide and vitamin "E" were given to the animals by gastric intubation. This research revealed many histological changes in the sciatic nerve, following exposure to antimony trioxide, including Wallerian degeneration in most myelinated nerve fibers with pleomorphic destruction, fragmentation, loss of normal lamination and rupture of myelin sheaths. The axoplasms of these nerve fibers were irregular, degenerated and contained myelin fragments with loss of neurofibrils. Obvious increase in endoneurium was also observed. Concomitant administration of vitamin "E" with antimony trioxide resulted in marked improvement in the histological changes observed in the sciatic nerve.

Keywords : neurotoxicity, antimony, vitamin e, anatomy, histology

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