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RESEARCH ARTICLE

Protective effect of vitamin E on biochemistry, oxidative stress and histopathological alterations induced by acrylamide in wistar rats (*Rattus norvegicus*)

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Abstract : Acrylamide (ACR) has recently been found in fried and backed foods, suggesting widespread public exposure. ACR is an industrial chemical material designated as a probable human carcinogen by IARC and USEPA. The aim of the present study was to evaluate the protective effects of vitamin E against acrylamide induced toxicity in rats. Forty Wistar male and female rats were divided in 4 different groups (each group have 5 male and 5 female). Group I served as control. Group II received ACR at dose of 15 mg/kg body weight. Group III received vitamin E at dose of 200 mg/kg body weight and Group IV administered vitamin E (200 mg/kg body weight) with acrylamide (15 mg/kg body weight). The biochemical results revealed that ACR (Group II) caused significant decrease in plasma albumin and plasma cholinesterase in male and female rats. In oxidative stress, the Group II male and female rats showed singnificant increase in LPO (lipid peroxidase) level and showed singnificant decrease SOD (superoxide dismutase) level. Histopathological alterations evidenced in brain, lung and spleen in male and female rats of Group II. Cotreatment of vitamin E with ACR (group IV) revealed improvement in biochemical and oxidative stress profile as well as in pathomorphology.

Key words : Acrylamide, Vitamin E, Albumin, Cholinesterase, Oxidative stress

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