

Effect of dietary capsaicin on 2-nitropropane-induced lipid peroxidation in rats.

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Capsaicin (trans-8-methyl-n-vanillyl-6-nonenamide, CAP) is a pungent constituent of hot peppers that has been used as a spicy food additive, preservative, and medicine. Our previous studies reported that CAP exerted an antioxidative property on lipid peroxidation *in vitro* and short term CAP supplementation *in vivo*. The purpose of this study is to investigate the long term effect of dietary CAP on 2-nitropropane (2NP)-induced lipid peroxidation *in vivo*. The male of SD rats (230~250g) were divided into 4 groups. Oxidative damage was induced by oral administration of 2NP at a dose of 500mg/kg BW, after 0, 0.5, and 5mg/kg CAP diet given for 2wk. And 24hrs of the 2NP treatment, rats were sacrificed. Lipid peroxidation in liver, gastric mucosa was estimated by measuring thiobarbituric acid reactive substances and conjugated dienes. In addition, alanine aminotransferase and aspartate transaminase activities in plasma were also measured. Malondialdehyde levels in liver and gastric mucosal were decreased in CAP treatment groups compared to the control. There was no difference of conjugated diene levels among the groups. Plasma alanine aminotransferase and aspartate transaminase activities in CAP-treated groups were lower than those of the control. Our result demonstrated that dietary CAP inhibited 2NP-induced lipid peroxidation in liver and gastric mucosa, indicating that long term supplementation of dietary CAP can also exhibit antioxidative property in rats. Moreover, dietary CAP could protect 2NP-induced hepatic cellular damage as well as gastric mucosal damage.