

Effect of Omeprazole on the Renal Cortex of Adult Male Albino Rats and the Possible Protective Role of Ginger: Histological and Immunohistochemical study

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Abstract : Introduction: Omeprazole is a proton pump inhibitor used commonly in the treatment of acid-peptic disorders. Although omeprazole is generally well tolerated, serious adverse effects such as renal failure have been reported. Ginger is an antioxidant that could play a protective role in models of experimentally induced nephropathies. Aim of the work: The aim of this work was to study the possible histological changes induced by omeprazole on renal cortex and evaluate the possible protective effect of ginger on omeprazole-induced renal damage in adult male albino rats. Materials and methods: Twenty-four adult male albino rats divided into four groups (six rats each) were used in this study. Group I served as the control group. Rats of group II received only an aqueous extract of ginger daily for 3 months through a gastric tube. Rats of group III were received omeprazole orally through a gastric tube for 3 months. Rats of group IV were given both ginger and omeprazole at the same doses and through the same routes as the previous two groups. At the end of the experiment, the rats were sacrificed. Renal tissue samples were processed for light, immunohistochemical and electron microscopic examination. The obtained results were analysed morphometrically and statistically. Results: Omeprazole caused several histological changes in the form of loss of normal appearance of renal cortex with degenerative changes in the renal corpuscle and tubules. Cellular infiltration was also observed. The filtration barrier was markedly affected. Ginger ameliorated the omeprazole-induced histological changes. Conclusion: Omeprazole induced injurious effects on renal cortex. Co-administration of ginger can ameliorate the histological changes induced by omeprazole.

Keywords : ginger, kidney, omeprazole, rat

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