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Olive Oil (Olea europea L.) Protects against Mercury (II) Induced Oxidative Tissue Damage in Rats

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Abstract : Mercury (II) is a highly toxic metal which induces oxidative stress in the body. In this study, we aimed to investigate the possible protective effect of olive oil, an antioxidant agent, against experimental mercury toxicity in rat model. Administration of mercuric chloride induced significant increase in serum: ALT, AST, and LPA activities; interleukine1, interleukine6, tumor necrosis factor α (TNFα), creatinine, urea, and uric acid levels. Mercuric chloride also induced oxidative stress, as indicate by decreased tissue of GSH level, GSH-Px, and GST activities along with increase the level of lipid peroxidation. Furthermore, treatment with mercuric chloride caused a marked elevation of kidney and liver weight and decreased body weight. Virgin olive oil treatment markedly reduced elevated serum: AST, ALT, and LPA activities; interleukine1, interleukine6, tumor necrosis factor α (TNFα), creatinine, urea, and uric acid levels and contracted the deterious effects of mercuric chloride on oxidative stress markers changes caused by HgCl2 in tissue as compared to control group. Our results implicate that mercury induced oxidative damage in liver and kidney tissue protected by virgin olive oil, with its antioxidant effects.

Keywords : mercury, antioxidant enzymes, pro-inflammatory cytokine, virgin olive oil, lipid peroxidation
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