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# Investigation of vitamin D effect(s) on the kidney function in sub-acute paraquat poisoning compared to N-acetyl cysteine

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Paraquat is one of the most common herbicides used in agriculture, which can cause very severe toxicity in humans and animals. In this study, we investigated the effect of N-acetyl cysteine and vitamin D on the oxidative toxicity of kidney tissue in sub-acute toxicity with paraquat. 36 male albino rat 8 weeks were randomly divided into 6 groups (n=6). Group 1 or control: Control group (received plate and water), group 2 and 3: Control received with vitamin D dosage in µg/kg/day2 and N-acetyl cysteine 6.25 mg/kg/day, group 4: Received paraquat 5 mg/kg/day, group 5 and 6: Poisoned with paraquat received vitamin D-treated dose of 2µg/kg/day and N-acetyl cysteine 6.25 mg/kg/day, this treatment continued for 7 days. At the end of the study, serum and kidney tissue collected. Total Antioxidant Capacity (TAC), lipid Peroxidation (LPO), Total Thiol Groups (TTG), urea and creatinine, vitamin D levels in kidney tissue by spectrophotometric and ELISA methods were evaluated. A kidney histo-pathologic evaluation was performed. The value of $p<0.05$ was considered significant. In paraquat-poisoned groups lipid peroxidation, urea and creatinine were increased and total antioxidant capacity, thiol groups and vitamin D levels decreased significantly ($p<0.05$). In treated groups, there was a significant decrease in kidney injury, lipid peroxidation, urea and creatinine in comparison with paraquat group and total antioxidant capacity, thiol groups, vitamin D levels significantly increased ($P<0.05$). Vitamin D decreased oxidative stress and tissue damage in the kidney caused by paraquat poisoning.

## Biography

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