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Evaluation of protective effects of caffeic acid against arsenic-induced damage in kidney of mice

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Background: Arsenic is a common environmentalcontaminant distributed around the world. The aim of this work was to study the Protective effects of caffeicacid leaves against arsenic–induced toxicity in thekidney of mice.

Methods: In this experimental study, 24 mice weredivided into four groups. Group 1 served as control. Mice in group 2 receivedwater containing 200 ppm sodium arsenite. Group 3 animals received caffeic acid(60 mg/kg body weight, i.p.) during arsenite treatment. Mice in group 4 onlyreceived caffeic acid. At the end of the experiment (21 days), At the end ofthe experimental period the renal dysfunction was evaluated by histologicalexamination and serum biomarkers

Results: The treatmentwith arsenic exhibited a significant increase in plasma renal biochemical parameters (urea and creatinine).Concurrent administration of caffeic acid with arsenite decreased the level of plasmaticconcentration of biochemical parameters.Histopathological results revealed mildto severe type of necrosis, degeneration, hyperemia and congesion changes in kidney of The treatmentwith arsenic.Furthermore, the histopathological studies confirmed theprotective effect of caffeic acid by reducing the pathological changes due toarsenic intoxication in kidney.

Conclusion: our presentstudy demonstrates that caffeic acid can a potential to protect arsenic-induceddamage.

Keywords: sodium arsenite, caffeic Acid, kidney