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THE POSSIBLE PROTECTIVE ROLE OF ALPHA- LIPOIC ACID AGAINSTHEXAVALENT CHROMIUM TOXICITY IN ALBINO RATS: BIOCHEMICAL AND HISTOPATHOLOGICAL STUDIES.

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ABSTRACT

Chromium (Cr) is one of the naturally occurring heavy metal. Extensive uses of hexavalent chromium Cr^{+6}in industrial and chemical process contribute to environmental pollution and its potential toxicity in animals and human. Alpha- lipoic acid(ALA)is natural antioxidant found in many types of food. 40 male albino rats were employed to evaluate the protective effect of ALA against Cr +6toxicity. Oral administration of rats with potassium dichromate ($K_2Cr_2O_7$) at dose level 10mg/kg body weight (b.w) daily for 4 weeks resulted in significant increase of serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), creatinine, urea, total cholesterol, triglycerides, glucose and significant reduction of serum albumin, total protein (TP)**.** Parallel to changes in biochemical parameters, Cr^{+6}- intoxicated rats showed marked pathological changes in liver, kidney, testes**.** Whilethe oral administration of ALA (200 mg/Kg b.w/daily) along with $Cr^{+6}$was significantly, attenuate toxic effects of $Cr^{+6}$and enhance metabolic systems of rats. Moreover,ALA administration succeeds to preserve architecture structure of tested organs. ALA could be considering as an effective therapeutic agent against oxidative stress of tissue damage mediated by heavy metals intoxication.

Keywords: Alpha-lipoic acid, Biochemical parameters, Hexavalent chromium, Histopathology,Toxicity.