

Curative effect of orally consumed *Aloe vera* juice on Ochratoxin A-induced nephrotoxicity in rats

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Summary. The current study was designed to evaluate the curative effects of *Aloe Vera* Juice (AVJ) on Ochratoxin (OTA) A-induced nephrotoxicity in rats. AVJ was orally administered in doses of 150 and 300 mg/kg body weight (BW) for six weeks within gavages daily with OTA (0.5 mg/kg BW) to induce nephrotoxicity. The kidney function markers (uric acid, urea nitrogen, creatinine and albumin), oxidative stress markers (malondialdehyde (MDA)), non-enzymatic (reduced glutathione (GSH), vitamin E) and enzymatic antioxidants (superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx)) were determined. In addition, the lipid profile markers such as total cholesterol (TC), triglycerides (TG), low density lipoprotein (LDL-C), very low density lipoprotein (VLDL-C) and high density lipoprotein (HDL-C) cholesterol were also estimated. In OTA-induced rats showed significantly increase levels of kidney function markers in serum (uric acid, urea nitrogen, creatinine and albumin), oxidative stress markers in kidney (MDA) and lipid profiles (TC, TG, LDL-C and VLDL-C) in serum except with HDL-C. In addition, the level of non-enzymatic antioxidants (GSH and Vitamin E) and the activities of enzymatic antioxidants (SOD, CAT and GPx) were significantly decreased in OTA-induced rats. Administration of AVJ juice to OTA-induced rats the above biochemical parameters back towards to near normal in control rats. The histological examination of kidney showed more severe degeneration of renal tubules in OTA-induced rats and treatment with AVJ juice showed (300 mg/kg BW) slight hypertrophy of glomerular tuft as well as mild degenerations in renal tubules. In this study, we conclude that the administration of AVJ having beneficial curative effect on OTA-induced nephrotoxicity in rats.

Key words: Aloe vera juice, nephrotoxicity, lipid profile, antioxidants

«EFFETTO CURATIVO DEL SUCCO DI *ALOE VERA* PER VIA ORALE SU RATTI CON NEFROTOSITÀ DA OCRA-TOSSINA A»

Riassunto. Il presente studio è stato progettato per valutare gli effetti curativi del succo di *Aloe vera* (AVJ) su ratti con nefrotossicità da ocratossina A (OTA). AVJ è stato somministrato per via orale in dosi di 150 e 300 mg/kg di peso corporeo (BW) ogni giorno per 6 settimane con OTA (0,5 mg/kg BW) per indurre nefrotossicità. Sono stati valutati i marcatori della funzionalità renale (acido urico, urea, creatinina e albumina), i marcatori dello stress ossidativo (malondialdeide (MDA)), gli antiossidanti non-enzimatici (glutathione ridotto (GSH), vitamina E) e quelli enzimatici (superossido dismutasi (SOD), catalasi (CAT) e glutathione perossidasi (GPx)). Inoltre sono stati valutati gli indicatori del profilo lipidico, come il colesterolo totale (TC), i trigliceridi (TG), il colesterolo-lipoproteine a bassa densità (LDL-C), il colesterolo-lipoproteine a bassissima densità (VLDL-C) e il colesterolo-lipoproteine ad alta densità (HDL-C). Nei ratti OTA-indotti si è evidenziato un aumento significativo dei livelli dei marcatori sierici della funzione renale (acido urico, urea, creatinina e albumina), dei marcatori di stress ossidativo renali (MDA) e dei profili lipidici sierici (TC, TG, LDL-C e VLDL-C) tranne che per HDL-C. Inoltre, il livello degli antiossidanti non enzimatici (GSH e