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Evaluation of the effect of royal jelly on hepatotoxicity (histopathological and biochemical changes) induced by arsenic trioxide in male rats according to the treatment dose of acute promyelocytic leukemia

Babak Mohammadian[1*], Zahra Amirkhani Dehkordi[2], Hosain Najafzade Varzi[3] and Ali Shahryari[4]

[1] Associate Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[2] Student of Pathology Course, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[3] Professor, Department of Pharmacology, Faculty of Medical Sciences, Babol University, Babol, Iran
[4] Associate Professor, Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran

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Abstract

Arsenic trioxide (ATO) is used in treatment of acute promyelocytic leukemia (APL). One of the major side effects of this drug is liver toxicity. Different doses of this drug have been used in different studies. Based on the ATO treatment protocol in APL patients (0.15 mg / kg) and the dose conversion formula between humans and laboratory animals introduced by the FDA, a dose of 1 mg / kg was selected. Royal jelly has attracted increasing attention in recent years given its high antioxidants capacity. This study aimed to evaluate the effect of royal jelly on histopathologic and biochemical changes of liver based on arsenic trioxide-induced hepatotoxicity in 8 groups of 5 rats. In groups one, two and three respectively, normal saline, royal jelly and arsenic trioxide; in groups four, five and six, different doses of royal jelly along with fixed dose of arsenic trioxide; in group seven arsenic trioxide along with vitamin E; in group eight arsenic trioxide alonge with vitamin E and royal jelly were given orally for 30 days. According to the results, the liver was normal in the normal salin group and royal jelly receiving groups, while it had pathological changes as hyperemia and cellular swelling (reversible changes) in other groups. The severity of these changes was reduced in royal jelly receiving groups. There was no significant change in the liver enzymes activity in all study groups.

Key words: Arsenic trioxide, Liver, Royal jelly, Histopathological, Rat

[*] **Corresponding Author**: Babak Mohammadian, Associate Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
E-mail: mohammadb@scu.ac.ir

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