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Investigating the effect of levamisole on some oxidative stress factors in Caspian tortoises

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Abstract

Veterinary science has so far focused mostly on the study of domestic animals, while reptiles, especially turtles, have received less attention. This is despite the fact that nowadays the use of reptiles, especially turtles, as pets and laboratory animals is increasing. Considering the proof of pathogenicity and the presence of parasites in these animals, it seems necessary to adopt appropriate treatment approaches for them. Due to the toxicity of avermectin and the resistance of nematodes to fenbendazole in turtles, levamisole is the chosen anti-parasitic drug in these animals. This study was conducted with the aim of evaluating the effect of levamisole at a dose of 10 mg/kg body weight as intravenous and subcutaneous injection on some oxidative stress factors in Caspian tortoises. The present study was conducted on 27 Caspian turtles with an average weight of 1.09 kg in 3 groups. The first group received Levamisole intravenously, but the second group received subcutaneously, in the same line the third group was the control group. Blood sampling was done at 7 different times during 24 hours at 0.5, 1, 2, 4, 8, 12 and 24 hours after drug administration. The results showed that the amount of malondialdehyde factor and catalase and superoxide dismutase enzymes in the serum of turtles treated with intravenous and subcutaneous levamisole have significant differences compared to the control group. While the total antioxidant capacity of the groups receiving the drug compared to the control group did not show a significant difference, which indicates the overall balance of the oxidant and antioxidant status so, it can be considered as one of the positive effects of the use of this drug in Caspian turtles. The results of the present study showed the efficient effect of levamisole as an antiparasitic drug with antioxidant properties that helps reduce oxidative stress.

Key words: Levamisole, Oxidative Stress, Turtle, Parasite

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