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Influence of parasitic invasions on the values of malondialdehyde and ceruloplasmin in horses

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Abstract

Parasitic invasions in horses often cause metabolic disorders and have a negative impact on their health and performance. The purpose of this research was to study the processes of lipid peroxidation and antioxidant protection in horse helminthiases, as well as following the deworming with a drug containing the antioxidant santoquine. The intensity of lipid peroxidation and antioxidant protection was determined in horses with different degrees of invasion by concentrations of malondialdehyde and ceruloplasmin accumulated in the blood. The studies have revealed that the concentration of malondialdehyde, the end product of free radical oxidation of cell membrane phospholipids, depends on the intensity of infestation with intestinal nematodes. In horses infested with paraskaris and intestinal strongylata, a significant accumulation of malondialdehyde was by 18.2% higher as compared to uninfected animals. The level of ceruloplasmin was significantly lower – by 21.8% in animals with a moderate degree of invasion as compared to clinically healthy animals. To neutralize free radicals the antioxidant santoquine was used. Effective deworming by means of using santoquine reduced the intensity of lipid peroxidation processes, which resulted in a significant decrease in the concentration of malondialdehyde by 22.1% and an increase in the level of ceruloplasmin against the background of the lower rate of free radical oxidation by 25.8%.

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