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Evaluation of hematological and serum lipid profile changes in cats infected with *Toxoplasma gondii*

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Abstract

Toxoplasmosis is an important zoonotic disease worldwide. Some experimental researches have been shown that infection with *Toxoplasma gondii* affects the hematological and biochemical analytes, including serum lipid profiles. The aim of the present study was to evaluate the hematological and serum lipid profile changes in cats infected with *Toxoplasma gondii*, referred to Veterinary Hospital of Ahvaz. Blood sampling was performed on 100 companion cats, both genders (52 females and 48 males) and in the age range of three months up to 17 years. Modified agglutination test and polymerase chain reaction were used to determine infection due to *Toxoplasma*, in acute and chronic forms, respectively. Measured indices were included white blood cell count, red blood cell count, hemoglobin concentration, hematocrit, mean cell volume, mean cell hemoglobin, mean cell hemoglobin concentration, red cell distribution width, total platelet count, neutrophils, lymphocytes, eosinophils, monocytes, and serum concentration of total cholesterol, HDL-c, LDL-c, and VLDL-c, triglyceride, transferrin, and iron in the infected and healthy groups. The results showed that the prevalence of infection was 11% and 32% in acute and chronic forms of Toxoplamosis, respectively. In comparison between groups, the total cholesterol and LDL-c levels were significantly higher in both infected groups compared to the uninfected one. Furthermore, in the infected group, there was a significant increase in mean HDL-c in males compared with females. All the infected cats were Domestic Shorthair and their mean age was significantly higher than healthy cats. The present study showed that despite the hypothesis of cholesterol consumption by the parasite to form vacuoles, serum total cholesterol as well as LDL-c, were higher in infected cats than healthy animals. It is likely that the parasite will reproduce more easily in a cholesterol and LDL rich environment.

Key words: *Toxoplasma gondii*, Hematology, Lipid profile, Polymerase chain reaction, Cat

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