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Research Article

Pathological changes in female rat kidney tissue infected by *Toxoplasma Gondii*

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bstract: This study aimed to investigate the effect of *Toxoplasma gondii* infection in female ıt kidney tissue. The results showed that infection of rates to *T. gondii* alters some blood ırameters such as urea, uric acid, and creatinine concentrations. In addition, the parasite ıfection affects the kidney tissue causing severe necrosis of the renal cells with bloody ɔngestion, bleeding, the occurrence of tissue cysts, anaphylaxis, bowman space, and renal ıbule expansion.

Keywords: *Toxoplasma gondii*, Fetal abnormality, Kidney, Rat.
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Introduction

Toxoplasma gondii is an intracellular parasite with worldwide distribution of pathological importance (Dubey 2009). The parasite reproduces sexually in the cat intestine as a primary host (Tenter et al. 2000). Inside the intermediate host such as human or rodent, parasitic infiltration through the central nervous system could occur leading to the slow formation of growing cysts inside neurons which could affect the host's life (Hutchison 1965). When a secondary host such as a rodent gets infected and eaten by a cat, the life cycle of the *T. gondii* would be accomplished (Lamberton et al. 2008).

The warm-blooded animals could be infected with *T. gondii* in the early three months of pregnancy leading to congenital diseases or abortion (Da Silva et al. 2006). *Toxoplasma gondii* may infect carnivores by eating bradyzoite occurring in meat tissue cysts while herbivores could be infected by ingesting oocysts from soil contaminated with cat faeces and also humans could be infected with both stages (Frankel 1999). Lymphadenitis is the most common clinical type of human infection with *T. gondii* but the congenital infection of the fetus is its major clinical problem that resulted during pregnancy from primary infection, also immunocompromised patients could be infected by ocular toxoplasmosis (Ghazaei 2006). This work aimed to study the effect of *T. gondii* infection on female rat kidney tissue.

Material and Methods

Infection procedures: In this study, 15 pregnant female Balb/c rats were infected with *T. gondii* by adding cat excretion in the water dish, and every five rats were placed in one cage. The control group included 5 rats placed in a separate area. 5 of the 15 rats were killed two months post-infection, their brains were collected, smears stained with Giemsa, and examined microscopically immediately for the cyst of *Toxoplasma*. For this purpose, 5 g of their brain were mixed with normal saline, 1000IU of penicillin, and 100 IU of Streptomycin. A solution of 10% was made, and 1ml of this solution was injected into 10 rats intraperitoneally (Beverley 1960). The injected rats were isolated in cages and their peritoneal fluid was examined. On the tenth day, the peritoneal was