

Ministry of Higher Education
and Scientific Research
College of Veterinary Medicine
University of Basrah



Immunological and Epidemiological Study of Toxoplasmosis Among Miscarriaged Women and Cats in Basrah Province

A THESIS

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By

Muntaha Abdulhameed Naser

Supervised by

Assist Prof. Dr. Ghazi Y. A. Al-Emarah

Prof. Dr. Maysoon, S. Flafil

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Summary

Toxoplasmosis is a disease caused by coccidian obligate intracellular parasite called *Toxoplasma gondii*. A comparative study was conducted upon patient group (women with spontaneous miscarriage) and control group (women with no history of abortion during delivery) and the role of animal by transmission the disease to human.

The current study takes nine months, extended from September 2014 until May 2014, through which 220 stool samples from cats and 53 blood samples from miscarried women and 36 from control with various ages, education and area are randomly collected from Maternity and Children, hospital in Basrah, Iraq. About 41 positive cases have been recorded in cats by sedimentation method and the infection rate is (35.96 %) and 39 positive cases have been recorded in cat's by flotation method and the infection rate is (36.79%).

The occurrence of the disease in relation to the residence, and contact with cats is also studied, the measurement indicates a higher risk among those living in the urban areas than those living in the rural one, and those of cats' contact than those who are don't. The disease among the selected population showed the highest percentage positive samples of toxoplasmosis 27(77.14%) in rural area while 8(22.85%) are in urban area .

Immunoglobulin's and complement concentration by Single radial immunodiffusion assay (SRID) was measured to IgA, C3, C4 .The result illustrates among 89 samples the mean level of IgA (261.787) in patient while the control is (210.845) shows high concentrations in infected women but statically no significant differences were found. Whereas, significant differences were observed in patient and control groups in

case of C3,C4 with mean levels of infected women (178.81), (40.177) while in control group (136.95),(32. 405)respectively.

Blood samples are analyzed by using Enzyme Linked Immunosorbent Assay Technique .The results indicate that there is a highly significant difference in the level of IgG between the positive patient and control group with mean value (141.8931) of positive group but the mean of control group (4.20429).Statistical difference is found in serum IgM levels in women with toxoplasmosis when compared with normal control group.

The immunohistochemistry (IHC) has been used for the first time at Basrah province, to diagnose the percentage of expression of p53 protein. Trophoblastic tissue during curettage is collected and stored as paraffin embedded blocks for immunohistochemical analysis to detection of apoptotic proteins (p53). The highest percentage of expression of p53 protein is found in the *T. gondii* positive group (40.87±7.54) and the lowest percentage was in both *T. gondii* negative and control groups (28.2±4.89) and (13.07±4.49) respectively.

There is statistical difference ($p \leq 0.001$) in the mean percentage of p53 between *T. gondii* negative and control groups .In addition there are high significant differences ($p=0.001$) in the mean percentage of p53 between *T. gondii* positive group and control groups and between *T. gondii* positive and negative groups. These high levels of p53 protein found in positive samples for *T. gondii* infection might indicate the important role of this protein in cell death and induction of apoptosis that lead to the end of pregnancy with abortion.