

Seroprevalence of toxoplasmosis between aborted ladies in Atbara district, Sudan

Abstract

Background: *Toxoplasma gondii* is an obligate intracellular protozoan parasite leading to toxoplasmosis in animals and humans. Principal maternal infection with toxoplasmosis throughout pregnancy is frequently associated with vertical transmission to the fetus. However it is not convinced whether *Toxoplasma* infection can cause frequent abortion.

Justification: There is no formerly published data about the occurrence of toxoplasmosis between aborted women in Atbara district.

Objectives: To recognize the Seroprevalence of toxoplasmosis among aborted women in Atbara district

Method: Cross sectional, descriptive study, 152 aborted women from Atbara district were examined for anti-*Toxoplasma gondii* antibodies, three diagnostic techniques were used (latex agglutination, ICT and ELISA).

Result: Generally the Seroprevalence rate of *Toxoplasma* parasite between aborted women according to the techniques used; 33.6 % by latex agglutination, 22.4 % by ICT and 35.5 % by ELISA method.

Conclusion: The study conclude that there was high prevalence of toxoplasmosis among the participants and indicated that ELISA is the best serological method for detection of *Toxoplasma gondii* infection.

Keywords: toxoplasmosis, abortion, Atbara, *gondii*, infection, life, cycle, agent

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Introduction

Toxoplasma gondii is an obligate intracellular protozoan parasite with a complex life cycle. This agent causes toxoplasmosis between humans and animals and is one of the most prevalent chronic infections, infecting one third of the globe population.¹⁻⁵ It's an important cause of reproductive failure in humans and farm animals leading to significant socio-economic losses worldwide.⁶ Three major sorts are accountable for fetal: consumption of including raw or semi-cooked meat, eating the oocysts defecated by cats and transplacental transmission from an infected pregnant mother to her fetus.^{7,8} Consideration of toxoplasmosis between pregnant ladies (owing to the danger of maternal transmission) and immunocompromised patients is of great significance for control programmes since infection can lead to severe pathologic endings amongst neonates with congenital toxoplasmosis and patients with immunodeficiency status.^{9,10}

Many serological methods, for example the latex agglutination test, enzyme-linked immunosorbent assay (ELISA) and indirect fluorescence antibody test, have been applied in the detection of antibodies against *T.gondii* in pregnant ladies. Though, ELISA is the most frequently used diagnostic method.^{8,10}

Earlier research has revealed that toxoplasmosis infection was more frequent between those with history of close contact with cats, raw meat and vegetable consumption, and low learning level.³ The most significant benefit in the serology of *Toxoplasma* is to detect whether the pregnant lady has acute infection or not, and if so, whether it happened before pregnancy.¹¹ The major trouble in diagnosis between pregnant ladies is long-term antibody IgM, but *T. gondii*-specific antibody (IgM) does not necessarily indicate acute illness.¹²

Though the infection is frequently asymptomatic or mild and self-limiting (fever, agitation, lymphadenopathy), infection happening throughout pregnancy leads vertical transmission to the fetus.³

Scarce is known about the epidemiology of *T. gondii* infection in ladies with abortions. Seroprevalence of infection with *T. gondii* changeable from 17% to 43.8% in women with abortions have been reported in Pakistan,¹³ Egypt,¹⁴ and India.¹⁵

Justification

There is no previously published data about the prevalence of toxoplasmosis among aborted women in Atbara district.

Objectives

To know the Seroprevalence of toxoplasmosis among aborted women in Atbara district.

Material and method

Study design

Cross sectional, descriptive study.

Study area

Atbara district, River Nile State, Sudan.

Study period

February –January, 2017.

Study population

Aborted ladies from Atbara district.

Sample size

152 ladies were involved in the study

Data collection: Well constructed questionnaire was established to collect data from each participant.

Statistical analysis

SPSS was used in analysis of the results.

Method

Latex agglutination, Immunochromatographic and Enzyme linked immunosorbent assays methods were applied in the study.

Ethical consideration

Each participant was informed about the objective of the study and they were consent to be involved in the study.

Result

The overall Seroprevalence rate of Toxoplasmosis between aborted ladies according to the techniques used; 33.6 % by latex technique, 22.4 % by ICT technique and 35.5 % by ELISA technique

Conclusion

We conclude that there was high prevalence of toxoplasmosis among the participants and indicated that ELISA is the best serological method for detection of *Toxoplasma gondii* infection.

Recommendation

Further studies must be done with large sample size applying both serological and molecular diagnostic methods.

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Conflicts of interest

The author declares there are no conflicts of interest.

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