Prevalence of toxoplasmosis among selected group of unmarried volunteers Sudanese females

Abstract

Background: toxoplasmosis is a disease that results from infection with the Toxoplasma gondii parasite, one of the world’s most common parasites. T. gondii has an environmental stage oocysts are shed in cat feces, sporulate, and disperse in the environment, where intermediate hosts get infected. Oocysts are an important source of infection for both animals and human.

Objectives: The purpose of this study was to determine the prevalence of toxoplasmosis among selected group of unmarried Sudanese females.

Materials and methods: A total of 45 unmarried volunteers females diagnosed serologically by latex agglutination method at parasitology laboratory, Faculty of Medical laboratory, Elrazi University, Sudan.

Result: From a total of 45 unmarried volunteers' females diagnosed serologically by latex agglutination test, 33.3 % were seropositive and 67.7 were seronegative.

Keywords: toxoplasmosis, unmarried, females, total, method, parasitist

Introduction

Toxoplasmosis is a disease that results from infection with the Toxoplasma gondii parasite, one of the world’s most common parasites. It’s an important cause of reproductive failure in man and farm animals resulting in significant socio-economic losses worldwide. Toxoplasmosis as other parasitic infections are dynamic in their distribution—some are endemic while many ubiquitous. The environment plays a key role in their survival and transmission often time. A toxoplasma infection occur by eating undercooked, contaminated meat (especially pork, lamb, and venison), accidental ingestion of undercooked, contaminated meat after handling it and not washing hands thoroughly (Toxoplasma cannot be absorbed through intact skin), eating food that was contaminated knives, utensils, cutting boards and other food that have had contact with raw, contaminated meat, drinking water contaminated with toxoplasma gondii, accidentally swallowing the parasite through contact with cat feces that contain toxoplasma gondii, and transmission, receiving an infected organ transplant or infected blood due to transfusion, or sexual transmission. This parasite cause a large amount of visual loss and morbidity, which is a serious public health problem.

Toxoplasmosis can occur at any age and is most common among pregnant women and their fetuses. It is estimated that 1 in 1000 pregnant women in the United States is infected with T. gondii. Infection during pregnancy can lead to serious complications, including stillbirth, neonatal death, and congenital toxoplasmosis. Congenital toxoplasmosis is a serious and potentially fatal disease that can cause brain damage, hearing loss, and vision problems.

Toxoplasmosis is present in every country and seropositivity rates range from less than 10% to 90%. The causative agent, Toxoplasma gondii, has a complex life cycle and is an important food borne pathogen. Human infection can result from the ingestion or handling of undercooked or raw meat containing tissue cyst (bradyzoite). Alternatively, it can result from direct contact with cats or from the consumption of water or food contaminated by oocysts excreted in the faeces of infected cats.

A study done by Daryani A showed that the overall seroprevalence rate of toxoplasmosis is among general population in Iran was 39.3%. A study done by Nebiye, et al showed that of 684 women, the prevalence of toxoplasmosis was determined to be 58.3%. A study done by Mohamed showed that the seroprevalence rate of toxoplasmosis among 400 unmarried women was 34%, and a study done by Mohamed showed that the seroprevalence rate of toxoplasmosis among 1146 serum samples was 43.6%.

Although most immuno competent individuals infected with toxoplasmosis remain asymptomatic throughout life, worldwide this parasite cause a large amount of visual loss and morbidity, in addition to fatal infections in immunocompromised patients. Hygienic measures are cost-effective and can reduce the chance of transmission.

Objectives

The purpose of this study was to determine the prevalence of toxoplasmosis among selected group of unmarried Sudanese females.

Materials and methods

Study population: A total of 45 unmarried Sudanese females from Khartoum state.

Collection criteria: Inclusion criteria: unmarried, Sudanese and female.

Exclusion criteria: married, not Sudanese and female.
Data collection: Data were collected from 45 unmarried Sudanese females from Khartoum state by parasitology staff at Elrazi University, Sudan.

Sample collection: 5 ml of venous blood were collected from each high lifestyle female in plain container and then serum was separated from each specimen.

Latex agglutination test: Was used to screen the sera.

Data analysis: Data of this study was analyzed by dividing the number of positive specimens to the whole specimens and then multiplies to 100 (percentage %), (Number of positive specimens/all specimens) ×100.

Ethical consideration: This study was approved by the faculty of medical laboratory sciences, Elrazi University, and informed consent was obtained from each participant before sample collection.

Result & discussions

Toxoplasmosis is one of the most important diseases, which is more commonly diagnosed serologically. When we compare our study result with the results of previous studies we observed that our results 33.3% is nearly to that detected by H. Jahani and M. Saraei among unmarried females which is 34% (Table 1).

Table 1 It shows the toxoplasmosis is one of the most important diseases

<table>
<thead>
<tr>
<th>Result</th>
<th>Number</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>15</td>
<td>33.30%</td>
</tr>
<tr>
<td>Negative</td>
<td>30</td>
<td>67.70%</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100%</td>
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</tbody>
</table>

Conclusion

In summary we conclude that further studies should be done with large sample size and including married Sudanese females in order to make a comparison between the two groups.

Acknowledgments

By the grace of Almighty Allah and his help I completed this study, all praise to him and special thanks to volunteers who we so cooperative and hospitable.

Conflicts of interest

The author declares there are no conflicts of interest.

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