

A Study On Prevalence Of *Toxoplasma Gondii* Antibodies In Camels (*Camelus dromedaries*) In Tripoli- Libya

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ABSTRACT

This study was carried out in order to determine the prevalence of *Toxoplasma gondii* antibodies in Camels (*Camelus dromedaries*). A total of 40 samples were found positive for the presence of *Toxoplasma gondii* antibodies, giving an overall prevalence of 19.05%, the rate of seropositive in females was 25% and 18.42% in males. The rate of seropositive was highest among camels aged 2-8y (20.79%) compared with camels aged 4m (9.38%). There is no significant difference between age group at $P=0.130$, ($X^2=2.291$) and between sex ($p=0.475$), ($X^2=0.508$) were showed during the present study.

INTRODUCTION

Toxoplasmosis is a cosmopolitan Zoonosis that infects a wide range of mammals and birds including live stock. This disease Caused by intracellular protozoan parasite, *Toxoplasma gondii* (1). *Toxoplasma gondii* infection occurs in camel through contaminated food and water. Although no pathogenic effect has been reported due to this infection, but possibly it might cause abortion (2). *Toxoplasma Gondii* antibodies in camels sera were reported from the Egypt (3,4), Sudan (5,6). Saudi Arabia (7), U.A.E. (6), Iran (8) Libya (9). Although, camels (*Camelus dromedaries*) is still an important animals in Libya, camels are reared in Libya for their meat and milk, there are not any recent reports available on *Toxoplasma gondii* in Libya. The aim of this present work was to carry out preliminary study to determine the prevalence of *Toxoplasma gondii* among camels (*Camelus dromedaries*) in Tripoli- Libya.

MATERIALS AND METHODS

Animals

A total of 210 blood samples of camel (*Camelus dromedaries*) from the main slaughter houses in Tripoli area, age and sex were recorded.

Samples

3- 5ml of blood from each sample were aseptically collected from Jugular Vein using

disposable syringes and transferred to sterile tubes (without anticoagulant) from the jugular vein. Left for two hours to coagulate, and serum was separated from the clot by centrifugation at 3000rpm, for 5 minutes and serum stored at -20°C until use for serological study (10).

Serological testing

Serum samples were tested using by latex agglutination test (toxocell latex Spain) according to the Jacobs (11). Allowing the reagent to reach room temperature, one drop tested serum(or one drop of control) were placed on the slid, shake the reagent Vial and add one drop of reagent next to the drop of samples, mix both drops with a stirrer till cover the whole surface of the slide section, rotate the slide for 5/minutes manually or on a rotary shaker set at 80-100/rpm. Results were determined by the presence or absence of agglutination.

Statistical analysis by using Ch. square test and appropriate P-value (0.010) were considered significance in the present study (12).

RESULTS

Out of the 210 serum samples examined in this study a total 40 (19.05%) were found to be seropositive. The association of sex with the presence of infection, the seropositive in females (25%) and in males (18.42%) (Table

1) and there is no significant difference between sex ($p=0.475$), ($X^2=0.508$) were showed during this study.

The rate of seropositive was highest among camel aged 2-8y (20.79%) compared with camels aged 4m (9.38%) (Table 2). There is no

significant difference age in groups at $P=0.130$, ($X^2=0.291$).

Positive reaction : agglutination visible to the makedey with simultaneous clearing of the milky backgrounds.

Negative reaction : No agglutination, mean is absence of antitoxoplasma antibodies.

Table 1. *Toxoplasma gondii* antibodies in camels in relation sex.

Sex	Number of camel examined	Seropositive*	%	Seronegative	%
Male	190	35	18.42	155	81.58
Female	20	5	25.00	15	75.00
Total	210	40	19.05	170	80.9

* Within Camel. Prevalence rate with sex is statistically different P -value = (0.130).

Table 2. *Toxoplasma gondii* antibodies in camels in relation to age.

Sex	Number of camel examined	Seropositive*	%	Seronegative	%
4mon-1y	32	3	9.38	29	90.62
2y-7y	178	37	20.79	141	79.21
Total	210	40	19.05	170	80.9

* Within Camel. Prevalence rate with age is no statistically different P -value = (0.475).

DISCUSSION

Toxoplasmosis is a zoonotic disease, caused by *Toxoplasma gondii* and has known in many countries since 1908 (13). The prevalence of Toxoplasmosis varies among countries, depending on traditions, customas and life styles of the inhabitants (12). There was previous record on *Toxoplasma gondii* at Tripoli region in this type of host, the percentage was 3.4% (5). A bout 3.4% (9).

The overall infection percentage of *Toxoplasma gondii* in the present study was 19.0%. The result almost similar with that recorded by in Egypt (3) and in Saudi Arabian (7). Lower than the percentage rate was recorded in racing camel (14), Pastrol camel (5) and calf camel (6). This variance in percentage may be due to the small numbers of indigenous animals examined which did not

give complete idea about the incidence of parasites in the examined area.

The seroprevalance rates of *Toxoplasma gondii* was high among camels aged 2-8y (20.79%) compared with camels aged 4m (9.38%) but statistically not significant. Similar other studies were recorded (6,7). On other hand not similar to (1), (4) who recorded high infection increased significant with age (1,9). This study also showed that the prevalence of *Toxoplasma gondii* antibodies in females was higher than males, although statistically non significance. Similar Sex relation was previously recorded in several studies (1,4,7).

In the present study there was no clinical signs observed in the infected camels. Finally we concluded that our record is considered the first recent study from Tripoli-Libya, where the parasite was previous reported from this

type of host. And also this results in camels during this work is low due to difference in their management in Libya where (5,7,14) camels most entirely kept for marketing and slaughtering.

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المخلص العربي

دراسة عن انتشار الأجسام المضادة للتوكسوبلازما قوندا عند الجمال
(وحيد السنام) في طرابلس- ليبيا

خيرية مفتاح القماطي- عدنان سالم النعاس- أحمد محمد راشد- محمد محمد أنور السيد
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لقد شملت هذه الدراسة على ٢١٠ من مصل الدم لفحص الأجسام المضادة لطفيل التوكسوبلازما جوندى فى الإبل (وحيدة السنام) وذلك بواسطة إختبار الدم (agglutination test latex) وذلك لمعرفة مدى انتشارها فى ليبيا وكانت نسبة الإصابة ٤٠% (19.05%). وكانت نسبة انتشار الأجسام المضادة لتوكسوبلازما قوندا عالية فى الإناث (25%) أكثر من الذكور (18.42%) وجدت أيضا فى الأيل فى الإبل عند عمر ٢-٨ سنوات (20.79%) بالمقارنة فى الإبل عند ١-٤ شهر (9.38%). أحصائيا لا يوجد اختلاف معنوى بين العمر، الجنس ونسبة الإصابة خلال هذه الدراسة، تشير هذه النتائج بأن التوكسوبلازما قوندا فى الإبل (وحيد السنام) قليلة الانتشار فى منطقة طرابلس.