PREVALENCE OF TOXOPLASMOSIS AMONG SHEEP AND GOATS IN BAGHDAD AREA

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ABSTRACT

The complement fixation test (CFT) and the direct fluorescent antibody test were used for detecting anti-Toxoplasma gondii antibodies in sera obtained from 143 sheep and 44 goats. Complement fixing antibodies were detected in 38 (26.2%) for sheep sera and 24 (54.5%) of goat sera tested by CFT.

On the other hand, 26 (18.2%) of sheep sera were positive by the IFAT. The combined use of CFT and IFAT allows the differentiation between an acute or latent T. gondii infection.

INTRODUCTION

Toxoplasma has been known since 1908 as a tissue parasite of many species of mammals and birds (1). Some investigators showed evidence that about 100% of some human population were serologically positive to this parasite (2) and 500 million people worldwide. Raw and under cooked meat, are thought to be the principle sources of human infection.
This study was done to determine the prevalence rate of 
*T. gondii* antibodies among sheep and goats in Baghdad using 
IFAT and CFT.

**MATERIALS AND METHODS**

Sera were collected from jugular vein, from 143 sheep 
and 44 goats at 2 abattoirs in Baghdad province at the time of 
slaughter. Each serum sample was divided into 2 portions and 
stored at −20 °C until used.

Complement Fixation Test (CFT):
The test was performed according to Cooney et al (7) 
using a soluble sonicate of *T. gondii* trophozoites (RH Strain), 
passed in Balb/c mice. The reagent used in the test was 
obtained from Behring Institute (Germany). All sera were 
inactivated at 56 °C for 30 minutes before tested.

Indirect fluorescent Antibody test (IFAT)
It was performed according to Jasim (8). Antigen was 
prepared from trophozoites obtained from peritoneal exudate of 
mice. Fluorescein conjugated anti-sheep IgG was obtained from 
cappel (organon Teknika Corpotation).

**RESULT AND DISCUSSION**

Complement fixing antibodies to *T. gondii* were detected 
in 38 (26.6%) of the 143 sheep sera, and 24 (54.5%) of the 44 
goats sera as shown in Table (1).
The finding that, 54.5% of goats had positive antibody titers to *T. gondii* appears to be higher than those obtained in Saudi Arabia 8% (9), in Spain 43.8% (10) and Iraq 40.5% (11). Sheep showed relatively lower positively rate (26.6%) than goats using CFT (Table 1) and 18.2% using the IFAT (Table 2). Our results in sheep appears to be higher than was found in Saudi Arabia (11%) using the IHT (9).

The rate of positively determined by CFT in sheep sera was slightly higher than those obtained by the IFAT. 12 sheep sera were positive by both tests. Mehlhorn (12) stated that, the combined use of CFT and IFAT allows the differentiation between an acute or latent *T. gondii* infection. High IFAT titers together with positive CFT results generally demonstrate an acute infection.
Table 1: Distribution of positive titers to *T. gondii* using Complement Fixation test.

<table>
<thead>
<tr>
<th>Titers</th>
<th>Goats (No. +ve)</th>
<th>Sheep (No. +ve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16</td>
<td>14 (31.8)</td>
<td>14 (9.8)</td>
</tr>
<tr>
<td>1/32</td>
<td>7 (15.9)</td>
<td>14 (9.8)</td>
</tr>
<tr>
<td>1/64</td>
<td>2 (4.5)</td>
<td>6 (4.2)</td>
</tr>
<tr>
<td>1/128</td>
<td>1 (2.3)</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>1/256</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1/512</td>
<td>0</td>
<td>3 (2.1)</td>
</tr>
<tr>
<td>Total No. +ve</td>
<td>24 (54.5)</td>
<td>38 (26.6)</td>
</tr>
</tbody>
</table>

Table 2: Distribution of positive titers to *T. gondii* using Indirect fluorescent antibody test in sheep sera.

<table>
<thead>
<tr>
<th>Titers</th>
<th>Total No. +ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/64</td>
<td>9 (6.3)</td>
</tr>
<tr>
<td>1/128</td>
<td>11 (7.7)</td>
</tr>
<tr>
<td>1/256</td>
<td>4 (2.8)</td>
</tr>
<tr>
<td>1/512</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td>Total No. +ve</td>
<td>26 (18.2)</td>
</tr>
</tbody>
</table>
REFERENCES


المتعدد ضد مواقع في الاغنام والماعز في منطقة بغداد

ليلى خليل رفعت، سعاد زيكي جودت
المعهد الطبي الفني / بغداد
المعهد الفني / المنصور

الخلاصة

تم استخدام اختباري تثبيت المتمم (CET) والتآ태ق المناعي غير المباشر (IFAT) للكشف عن أجسام المضادة لطفيليي المواقع الكوندية في مصلى
143 من الاغنام و 44 من الماعز في محافظة بغداد.

ştırت نتائج اختبار تثبيت المتمم لمصلى الاغنام 24 (71.06%) حالة موجبة، ولمصلى الماعز 24 (50.0%) حالة موجبة، كذلك اظهر استخدام
مصلى الاغنام 26 (71.88%) حالة موجبة.

بين ان استخدام الاختبارين يمكن تمييز بين الحالة الحادة أو
الكاملة للمرض.