Introduction

Brucella ovis is an infectious cause of ovine contagious epididymitis in sexually mature rams, resulting in epididymo-orchitis leading to major economic losses to the sheep industry worldwide. For serodetection of anti Brucella ovis antibodies among sexually mature rams with epididymo-orchitis by using commercial indirect enzyme-linked immunosorbent assays (I-ELISA; IDEXX B. ovis Ab Test kit; Idexx Montpellier, France). During the period from September 2017 to the September 2018, a 200 sera were collected from 42 commercial flocks in Mosul city, Iraq. Scrotal palpation of rams may suggest the presence of this infection in a given flock. The results of the study revealed that, the seropositive animals for B. ovis infection was (12\250) 4.8 %. The clinical alterations were observed by palpation in the seropositive rams, mainly on epididymes (66.7%) and testicles (33.3%), and (83.3%) alterations were unilateral, and 2/12 (16.7%) bilateral. This is the first study of serodiagnosis of ovine contagious epididymitis in Mosul city, Iraq. The study provided important information for authorities to planning the control and eradication program.

Keywords: Brucella ovis, Ram, indirect ELISA, Epididymo-orchitis, Serodiagnosis.

Material and Methods

Sample collection

For a period of one year (September 2017 to the September 2018). A 250 fresh blood samples were collected from a local breed sexually mature rams with epididymo-orchitis at 42 commercial flocks in the Mosul city (is a major city, located some 400 km north of Baghdad, Iraq). Blood samples were collected from each ram by jugular venipuncture for sociological analysis and the clinical status of the animals was recorded.

Clinical examination

A total of 250 local breed rams were evaluated by palpation of scrotal contents to detect testes and epididymis lesions, any differences in size, consistency, shape or swellings in external genitalia were considered abnormal and were registered [2].

First Serodiagnosis of Brucella ovis Among Rams With Epididymo-orchitis in Mosul City, Iraq.

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Serological examination

Blood samples were centrifuged for ten minutes at 1500 rpm to obtain the serum and then stored in -20 °C until use. For detection of anti B. ovis antibodies in the sera, a diagnostic commercial indirect ELISA (I-ELISA; IDEXX Brucella ovis Ab Test kit; Idexx Montpellier, France). The test was performed following the procedures described by the manufacturer.

Results

Twelve rams (4.8%) presented scrotal palpable lesions (epididymo-orchitis) in the Mosul city by using indirect ELISA, IDEXX Brucella ovis Ab Test kit. In this study, the percentage of negative samples were higher than the positive samples (Table 1). The clinical alterations were observed by palpation in the seropositive rams, mainly on epididymes 8/12 (66.7%) and testicles 4/12 (33.3%), and 10/12 (83.3%) alterations were unilateral, and 2/12 (16.7%) bilateral.

Discussion

Brucella ovis is a major infectious cause of ovine contagious epididymitis in sexually mature rams, resulting in economic losses for the sheep industry worldwide [2,3,6]. The result of our study was revealed in that 4.8% of examined rams have antibodies against B. ovis., this result represents the first serodiagnosis of ovine contagious epididymitis in Mosul city, Iraq.

Ovine brucellosis caused by Brucella melitensis, and B. abortus was reported in the small and large ruminants in many previous works in the different parts of the Iraq [13-16].

B. ovis infection was confirmed in different countries such as New Zealand [17], Romania [18], Croatia [19,20], Serbia [21], Brazil [22], Argentina [23], India [12,24], France [25] and Turkey [10], while some countries report never having recorded it as in Italy [26], Iran [27], and Canada [28].

<table>
<thead>
<tr>
<th>The number of examined animals</th>
<th>Number of positive animals ( %)</th>
<th>Number of negative animals ( %)</th>
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<tbody>
<tr>
<td>250</td>
<td>12 (4.8)</td>
<td>238 (95.2)</td>
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</table>

In this study, the percentage of negative samples were higher than the positive samples, which can be attributed to either to trauma or to the presence of many species of bacteria causing epididymo-orchitis in ram [2,4].

The most frequently reported bacterial isolates include Actinobacillus seminis, A. actinomycetemcomitans, Histophilus ovis, Haemophilus spp., Corynebacterium pseudotuberculosis ovis, B. melitensis and Chlamydophila abortus [2,4,29].

B. ovis infection was diagnosed in this study using commercially available Indirect ELISA kits [31]. A definitive diagnosis of B. ovis infection requires laboratory tests, including serology, bacteriology, and PCR [23,31]. I-ELISA has been shown to be the most sensitive and specific test. As a diagnostic serological method, the ELISA has important advantages over other serological tests commonly used for the diagnosis of ovine brucellosis, such as providing readily measurable results and being easy to perform and standardize [12,32,33].

TABLE 1. Percentages of the anti Br. ovis antibodies in local breed rams with epididymo-orchitis in the Mosul city

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Conflict of interest:

Authors state no conflict of interest.

References


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