

Survey for ovine and caprine brucellosis in Kirkuk

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Abstract

This study was conducted to determine the prevalence of brucellosis in the province of Kirkuk and its environs. Rose Bengal test were used on males and females of sheep and goats for the period from 1/1/2016 to 31/12/2016 in the veterinary hospital in Kirkuk and based on the cases received at the veterinary hospital. The incidence of brucellosis was 32.2% of total animals, 97.9% of females and 2.1% of males. For animal species, the rate of infection in sheep and goats was 89.6% and 10.4%, respectively. Abortion occurred in the eight, eleven and ninth month of the year and the most extreme in the Laylan, Yayci and City center this percentage of the infection is high.

مسح لمرض البروسيليا في الاغنام والماعز في محافظة كركوك

فاطمة جمعة اصغر

الخلاصة

أجريت هذه الدراسة لتحديد نسبة انتشار مرض البروسيليا في محافظة كركوك وضواحيها وباستخدام اختبار وردية البنجال على ذكور وإناث الأغنام والماعز والفترة من 2016/1/1 ولغاية 2016/12/31 في المستشفى البيطري التعليمي في كركوك و على الحالات الواردة الى المستشفى البيطري. حيث أظهرت الدراسة أن نسبة الإصابة بالبروسيليا كانت 32,2% من المجموع الكلي للحيوانات منها 97,9% من الإناث و 2,1% ذكور، أما بالنسبة لنوع الحيوان . كانت نسبة الإصابة في الأغنام والماعز 89,6% و 10,4% على التوالي وأكثر حالات الإجهاض حدثت في شهر آب ، أيلول و تشرين الثاني من السنة ومعظمها في ليبلان ،يايجي ومركز المدينة على التوالي. وقد أستنتج من الدراسة أن نسبة الأصابة بالبروسيليا عالية في كركوك وضواحيها

الكلمات المفتاحية : بروسيليا ، الاغنام والماعز ، كركوك

Keywords: brucellosis , ovine and carbine , Kirkuk

Introduction

Brucellosis is a significant cause of economical loss in sheep, goats, in developing countries currently has serious impact on the livelihood of farmers ,and it is one of the important endemic disease in the region and causes abortion during the late months of pregnancy. Also various complications such as placental retention and uterine inflammation leading to temporary or permanent infertility (1). The losses caused by the disease are significant in many countries of the world and especially in the Middle East, where it is considered an endemic disease (2). The sheep of " Awassi and Kurdi", which are

present in Iraq, are among the strains that are ready to be infected(3) The disease affects all ruminants such as cattle, buffaloes, sheep, goats and non-ruminants such as pigs, horses and dogs, as well as wild animals. Until recently, the microbe had six known species, the most recent of which was Brucella canine (1967). Since human discovery does not stop at the end, In the last century, this species affects marine animals and is known as Bruella maris and is also transmitted to humans(4) Farmers, veterinarians and others involved in animal handling are at a higher risk of direct infection and individuals who ingest unpasteurized dairy products especially

from area of endemic infection are at risk of food-borne brucellosis (5). Diagnosis of clinical brucellosis in animals is made by the use of an appropriate serological tests such as "Rose Bengal plate test (RBPT)", "tube agglutination test", "ELIZA test" (6, 7). In this study, we aimed at determining the seroprevalence of brucellosis in some areas of Kirkuk city due to the importance of this disease in both human and farm animals.

Materials and Methods

A total number of (148) local breed sheep and goat from all ages were suffering from abortion come to Veterinary Teaching Hospital in Kirkuk from different areas of Kirkuk (yayci , Citycenter , trcalan , Dibce , Laylan , kumbetler , Altunkupri , shown , daquq , topzawa , chardaglo) during the period from 01/01/2016 to 31/12/2016 for investigating the prevalence of brucellosis. All animals were examined clinically. Blood sample was taken from the jugular vein by using disposable syringe (10 ml). Serum was obtained by centrifugation of blood for 3000c.per minute for 15 minutes sample. Serum was tested by serological tests which included "Rose Bengal Plate Test (RBPT)" that was performed as described by (5) . The data were statistically analyzed using the chi –square test at the probability level ($P < 0.05$) which described by (8) .

Results

The current study showed that the percentage of infection was 31.76 % of the (148) animals with abortion brought to the veterinary hospital Table (1) .As for the animal species, 10.4% of the goats and 89.6% of the sheep and the animal type had no significant effect ($P < 0.05$) on the incidence of infection. Table (1) .

Table (2) indicates that there was no significant effect for the months of the year

and the geographical distribution of animals in the different regions of Kirkuk Governorate at ($P < 0.05$). However, most of the infection rates were in , Laylan, Yayci and City Center (46.15 % ,45.45 % and 38.71 %) respectively, and for the months of the year, the August to September and November month exceeded the rest of the months in the percentage of infection was 45.83 % , 33.33 % and 32.61 % respectively .

Discussion

The results showed in Table (1) that the percentage of infection was (31.76)% of the total (148) . (9) In the sheep for all governorates of Iraq were (4.38%) and Baghdad in particular (3.72)% , while in (10,11,12) was (7.9,0.93,13.3%) to take over, and converged with the study (13,14) (55.76) and (56)% in Nineveh, but in Al-Anbar it 6.44% in ewe . The wetlands were (10%) in the treated ewes, (18.75%) in non-aborted patients and (14.7%) in males (15), while(16)refers the effect of sex was 3.8% for male and 1.7% female .

The reason for the high rate of infection in the current study is that the study was conducted on animals given to the veterinary hospital because of abortion . Animal type had no significant effect ($P < 0.05$) on the incidence of infection. Table (2) This result was not agreed with the study .(13), which indicated that the rate of infection in sheep and goats was 28.57% and 34.31% respectively, probably due to the fact that this study was conducted on cases of abortion received in the veterinary hospital , While disagreed from (17) in Ethiopia, which indicated that the rate of infection in goats was higher than that of sheep (3.1% and 0.8%) respectively .

Table (2) showed no significant effect for the months of year and the geographical distribution of animals in the different

regions of Kirkuk Governorate at ($P < 0.05$), but the most infected animal occurs in Laylan, Yayci and City Center due to the increase in the number of animals raised in these areas or increase in the population density of the animals in (Laylan and Yayci). The City Center especially the popular areas, where most of the population tends to raise animals in their homes in addition to the migration of a large number of animal

breeders from rural areas with their animals to City Center due to security conditions. As for the months of the year, the first outbreak was in the August, September and November month respectively, with the onset of the fall season in sheep and was higher than the second wave, which appeared in March and spring births of sheep and goats, without significant differences.

Table(1) Relationship between incidence of brucellosis and type of animals

| Brucellosis Test Results | Type of animals | | Total NO.(%) |
|--------------------------|------------------------|-----------------------|------------------------|
| | Sheep NO.(%) | Goat NO.(%) | |
| Positive | 42 (89.36) | 5 (10.64) | 47 (31.76) |
| Negative | 87 (86.14) | 14 (13.86) | 101 (68.24) |
| Total | 129 (87.16) | 19 (12.84) | 148 (100) |

Table (2) indicates that there was no significant effect for the months of the year and the geographical distribution of animals in the different regions of Kirkuk Governorate at ($P < 0.05$). However, most of the infection rates were in Laylan, Yayci and City Center (46.15 % ,45.45 % and 38.71 %) respectively, and for the months of the year, the August to September and November month exceeded the rest of the months in the percentage of infection was 45.83 % , 33.33 % and 32.61 % respectively .

Table (2) Relationship between incidence of brucellosis and region of Kirkuk

| Location | yayci | | City center | | trcalan | | Dibce | | Laylan | | Kumbeter | | Alkun kupri | | chardaglo | | Daquq | | Topzawa | | Shown | | Infected | % |
|----------|-------|-------|-------------|-------|---------|-----|-------|-------|--------|-------|----------|-------|-------------|-----|-----------|-------|-------|-------|---------|-----|-------|-----|----------|-------|
| | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | -ve | +ve | | |
| Month | Total | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 21 | --- | 13 | 2 | --- | --- | 1 | --- | 1 | 1 | --- | --- | 2 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 3 | 14.29 |
| 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| No Case | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 13 | --- | 4 | 5 | --- | --- | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5 | 38.46 |
| 4 | 7 | --- | 1 | --- | --- | --- | --- | --- | 3 | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3 | 14.29 |
| 5 | 5 | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3 | 14.29 |
| 6 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| No Case | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| No Case | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 24 | 1 | 2 | 8 | 7 | --- | 2 | 1 | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | --- | --- | --- | --- | --- | 11 | 45.83 |
| 9 | 46 | 2 | 3 | 8 | 7 | 3 | 2 | --- | --- | --- | --- | --- | --- | --- | 2 | 1 | 9 | 2 | 2 | --- | 3 | 2 | 15 | 32.61 |
| 10 | 27 | 1 | --- | 3 | 2 | --- | 9 | --- | 3 | 2 | 3 | 1 | --- | --- | 2 | 1 | --- | --- | --- | --- | --- | 6 | 22.22 | |
| 11 | 5 | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 20 | |
| 12 | 0 | | | | | | | | | | | | | | | | | | | | | | | |
| No Case | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 148 | 6 | 5 | 38 | 24 | 3 | 18 | 1 | 7 | 6 | 4 | 3 | 4 | 1 | 6 | 3 | 10 | 2 | 2 | --- | 3 | 2 | 47 | 31.76 |
| % | | 54.55 | 45.45 | 60.32 | 38.71 | 100 | 0 | 94.74 | 53.85 | 46.15 | 57.14 | 42.86 | 80 | 20 | 66.67 | 33.33 | 83.33 | 16.67 | 100 | 0 | 60 | 40 | | |

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