SEROEPIDEMIOLOGICAL STUDY OF OVINE Q FEVER IN BASRA PROVINCE ,IRAQ

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ABSTRACT

Indirect ELISA test was used to detect specific antibodies against *Coxiella burnetti* in sheep in different regions of Basra province.184 local sheep breeds were randomly selected of different ages and of both sexes were used in this study, including 98 pregnant ewes, 55 non-pregnant ewes, 8 aborted ewes ,7 ewes of still births, moreover 112 lower than 2 years,more than 2 years 72and 13 rams.

Results showed, that the percentage of infection detected by indirect ELISA were 41.84%. It have been concluded that *C.burnetti* were infected ewes of different status in Basra province, therefor periodic investigation of suspected animals must adviced. were a significant between, areas, age, groups pregnancy status and still birth ewes .incontrast non significant different were detected among gender , abortion .

INTRODUCTION

Q fever is an important zoonotic disease. caused by *Coxiella burnetti* an obligate intracellular small gram negative bacterium, This disease is endemic throughout the world(1). Infection has a wide range of mammalian hosts (2).

The infection is principally asymptomatic in animals (1) and be transmitted by contaminated aerosols (3). *coxiellosis* is one of the most important diseases which cause serious economic losses among sheep industry worldwide, especially at lambing time and is considered a public health problem (4). The infection in sheep may result in abortion, stillbirth, delivery of weak offspring and infertility (5). moreover additional symptoms such as mastitis, metritis, pneumonia, conjunctivitis and

hepatitis may also occur (6). In humans, *Coxiella burnetii* causes a variety of clinical signs as a flulike illness, pneumonia, hepatitis and endocarditis(7). Ticks and Raw milk or contaminated dairy products in the transmission of diseases good roles (8). Little information had been provided on the infection of C. *burnetii* in Basra-province therefore the aim of this study were to detect the seroprevalence of Q fever in sheep using indirect ELSA technique.

MATERIALS AND METHODS

Blood sampling:10 ml of Blood samples were collected via jugular vein puncture for serum analysis.

ELISA teqhniqne:Serum samples were tested using indirect ELISA test, (LSivet^{Tm}Ruminant Q fever _serum, company Life Technologies, France). according to the manufacturer's instructions.

Statistical analysis: Statistical analysis was done using Chi square (9).

4. Results: Antibodies to *C.burnittii* were detected in 77 out of 184 sheep serum samples collected in this study therefore the infection rate were (41.84%).

Table (4.1): Number animals of the study .

Animal	Total	Sero-positive
Rams	**13**	**6**
Pregnant ewes	**98**	**53**
Nonpregnant ewes	**55**	11
Aborted ewes	**8**	**3**
Anomalies	**2**	**1**
Still briths	**7**	**2**
Infertility	**1**	**1**
Total	**184**	**77**

reported in AL- Since the highest prevalence of *C.burnetti* infection was Zubair 63.93% whereas the lowest prevalence reported in Abu Al-Khasib 14.28%.The prevalence of *C. burnetii* in other regions were 54.76% in Shatt AL-Arab and 23.o7

in AL-Harthah.There was highly significant differences($p< 0.01$) in the prevalence of *C. burnetii* infection among different regions. .

Table (4.2): Prevalence of *C.burnettii* in according to the regions of Basra province.

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REGION	TOTAL	SERO-POSITIVE	PERCENTAGE
AL-ZUBAYR	61	39	63.93
SHATT AL-ARAB	42	23	54.76
AL-HARTHAH	39	9	23.07
ABU AL-KHASIB	42	6	14.28
TOTAL	184	77	41.84

Furthermore prevalence were detected significant highly in nonpregnant ewes 54.08%than in pregnant ewes 20 % .

Table (4. 3): Prevalence of *C.burnttii* in according to pregnancy status.

Animal	Pregnant ewes	Nonpregnant ewes
Total	98	55
Sero-positive	53	11
Percentage	54.08	20

On the other hand significant difference $p<0.01$ were seen in nonstill birth ewes 44.6% than in still birth ewes .

Table (4.6): Prevalence of *C.burnetti* in according to status still birth ewes and non-still birth ewes.

Animal	Still birth	Nonstill birth
Total	7	35
Sero-positive	1	12
percentage	14.3	34.28

According of animals ages results were also showed that highly significant difference were detected in animals group lower than 2 years old 41.96%, than in animals group more than 2 years old **.Table (4.7):** Prevalence of *C.burnetti* according to age.

Animal	Age groups (year)	
	Under 2 years old	more than 2 years old
Total	112	72
Sero-positive	47	30
Percentage	41.96	41.66

On the other hand results were indicated non significant positive results according to sexes ,abortion.

DISCUSSION

Results of the present work was revealed the detection of anti Q-fever antibodies in sheep in four different locations of Basrah province at first time and that confirm the world wide of Q-fever distribution (10). Because of less application of control programs related to animals populations and environment which enhance transmission of the disease between animals moreover the presence of Q fever in neighboring countries like Turkey and Iran (11)(4), in Saudi Arabia (12)in Jordan (13), play a role ,since the quality control programs is paralysed .Therefore animals

can easily in illegal to Basra province enhancing transmission in the local area and between provinces other hand climate replacement in the wet ,dry weather ,also play a good role in fixing answer surviving of micrograms . Q fever reported to be in the Netherlands(14), in Italy and in Spain (15) in Mexico (16), in Sudan(17), in Bulgarian (18), in American sheep (91),in Iran (20).Indirect ELISA has been shown highly specific diagnosis criteria.The present work show different result high incidence in the In Al-zubair part of the Basra province which represent west part of the Basra province compared with other part of the same area due to it was Border area and un controlled movements of small ruminants in grazing ,disease occurrence in neighboring countries like Saudi Arabia (21)(12) AL_ Zubair were sandy and grazing areas are open field therefore from helping the spread of the disease by wind and the sheep intensity are more (22).12On the other hand low incidence where detect in Abu Al-khasib south area of Basra province since animals intensity is low and Animal, husbandry indoor (22; 10) .

(11)where mention that the incidence of disease are high in pregnant ruminants compared with non Pregnant. Since pregnant are highly susceptible to infection.(23). The present work showed that there significant result of Pregnant status in Q fever disease. Result where also showed that there is significant result of still birth status in Q fever disease where appear in pregnant animal(24) mention importance of still birth status and increase economic losses related to this clinical signs since still birth might occur due to this phenomenon may be play a role in the persistence of the C. *burnetii* infection. *C. burnetii* bacteria show a special affinity to reproductive tissues in pregnant animals. The *C. burnetii* infect the trophoblastic cells of chorioallantoic membranes in pregnant, and maximum bacterial proliferation was shown in the fetal placental part (25). Q fever disease is highly associated with reproductive problems(still birth status) in sheep(26). The present work where agreed with study(27) whom mention the still birth status related to the Q fever It have been shown that animals more than 2 years highly significant infection rate comparing with animal lower than 2 years old which may be describe as related to the immune status level of the infected animal(20) .

دراسة وبائية مصلية للتحري عن حمى كيو في الضأن في محافظة البصرة,العراق

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الخلاصة

استخدام فحص الاليزا غير المباشرة لفحص 184 من الضأن(لتحديد الاجسام المضادة ل *C.burnetti* في مناطق مختلفة من محافظة البصرة بشكل عشوائي من الاناث والذكور شملت 98 نعاج حوامل ، 55 نعاج غير حوامل ،8 نعاج ولدت اجنة ميتة و13 من الذكوراذا كانت 112 منها في اعماراقل من سنتين و 72اعمارها اكبر من السنتين .اظهرت نتائج الدراسة ان نسبة الخمج الكلية كانت 41.8% . استنتج من هذ الدراسة ان الخمج بالركستيا *Coxiella burntti* *سجلت في* البصرة ويصيب الضأن لذا فمن الظروري التحري الدوري عن اصابات الحيوانات المشكوك بها.وقد تم الكشف عن أهمية بين المناطق والعمر والحالة الحمل و نعاج ولدت اجنة ميتة. من النقيض غير مهمة مختلفة بين الجنسين، وحالات الإجهاض.

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