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PREVALENCE OF BOVINE ANAPLASMOSIS IN IRAQ

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SUMMARY

Blood samples from 580 cattle were examined for detection of anaplasmosis. Results of thin blood smears showed an infection rate of 26.6% for the three regions of Iraq. This rate was highest for the northern region, when the rapid card agglutination (CT) method was used, similar trend was observed with a higher sensitivity as compared to the results obtained by thin blood smears. The rates of infection with CT method were 53% , 26.6% and 29.6% for the nothern, middle and southern regions respectively. Results of this study present the first record of the incidence of cattle anaplasmosis in this country.

INTRODUCTION

Anaplesmosis is an infectious rickettsial disease found in many parts of the world where the tick intermediate host exists. In Iraq, this disease is known to exist among livestock. However, no work has been done to ascertin its prevalence. The only information available is the reference to its mere existence in F.A.O. report (1) submitted to the goverament of Iraq.

Although bovine anaplasmosis, caused by *Anaplasma marginale*, can be detected, as other blood parasites, by stained thin blood films, yet , this method may fail to

detect it in animals with low grade infection or carriers. Among serological tests complement fixation (CF) and card aggiutination test (CF) are considered to be the more efficient (2) . The later technique has been developed by Amerault and Roby (3) and has the advantage of being easy, rapid and relatively simple tool for diagnostic as compared to other metods and can be used in the field besides the laboratory.

The present work aimed, for the first time, at recording the prevalence of bovine anaplasmosis in Iraq together with a comparative study between Gimesa stained blood smears and CT method as tools for diagnosis of this disease.

MATERIALS AND METHODS

A total of 580 whole blood samples were taken from indigenous breeds of grazing cattle at the three geographical regions of the country (133 from the north, 275 from the middle and 175 samples from the south regions). Samples were examined for *A. marginale* by preparing thin blood films stained with Giemsa stain. For the comparison of the results of thin smeare with that of CT method diagrams are shown in Fig. 1; (Mynson, Westcott, and Dunninge, INC ., Baltimore, Maryland 21201) 154 of the above serum samples were randomly taken and tested for the detection of *Anaplasma* infection by the later technique.

RESULTS

Out of the 580 Giemsa stained thin blood smears, 131 (22.6%) were *Anaplasma* positive. When the geographical regions are considered, it appeared that the rate of infection for the northern region (30.8) was noticeably higher than those of the middle (18.9%) and southern region (22%) (Table 1). Results of comparison between thin smears and CT methods are shown in table 2. From this table it is evident that the overall positive samples were (29.9%) detected by CT method is obviously

higher than that detected by thin smear method (20.8%). This differences was found in the three regions of the country as shown in table 2.

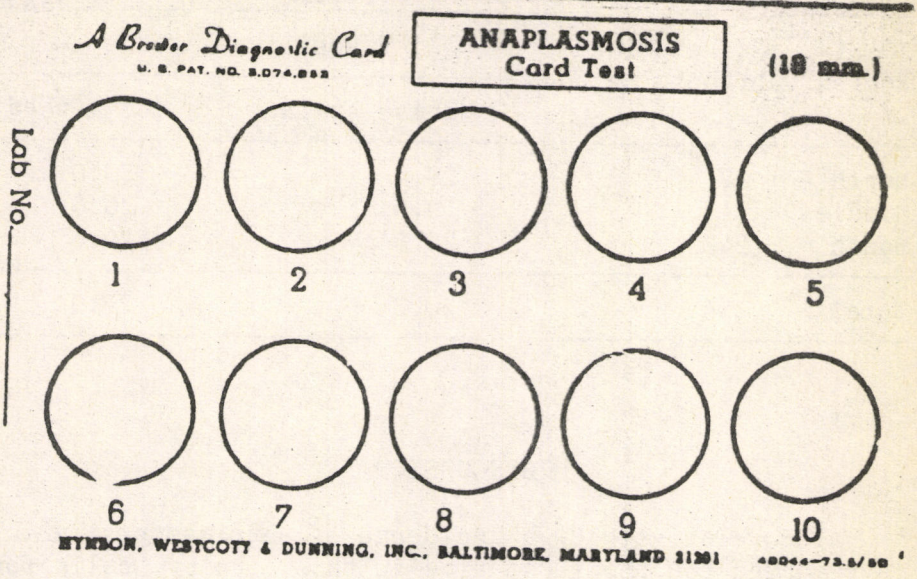

Fig.1: Card Anaplasmosis Test

Table 1: *Anaplasma* cases detected by giemsa stained blood films from the three geographical regions in Iraq

Regions	Number of cases		% Positive
	Tested	Positive	
North	133	41	30.8
Middle	275	52	18.9
South	172	38	22.0
Total	580	131	22.6

Table 2: Comparison of giemsa stained thin blood films and CT methods for detecting *Anaplasma marginale* in Iraqi cattle

Region	No. examined by both methods	% Positive cases	
		Giemsa stain	CT method
North	17	29.4	53.0
Middle	113	19.5	26.6
South	24	20.8	29.6
Total	154	20.8	29.9

DISCUSSION

The relatively high incidence of anaplasmosis, which is recorded for the first time in this country, calls for serious follow up and care with regard to the disease and its vector host as it could be an unrecognized serious problem. In some countries like Australia (4), it has been found that the major borne diseases causing deaths of cattle are babesiosis and anaplamosis.

Results of the present study revealed that all the three regions of the country had relatively high rate of infection in both Giemsa stained films and CT methods. The reason of the northern region showing the highest rate amongst the three, could be attributed to the wider range of grazing of animals compared to the rather restricted areas of grazing in the other two regions, which in turn increases the probability of animal exposure to intermediate host. In addition, the environmental conditions of the northern region are more favorable for the thrive of the intermediate host.

Regarding the higher sensitivity of CT methos in our resuls were in agreement with those of Amerault and Roby(3), Obi (2) and Patarroyo et. al. (5), and it could be due to detection by this method of convalescent or carrier reactors in which the parasite can not be

detected in blood film (6).

The present results urge us to recommend CT method as it is rapid, simple, highly sensitive and more practical as compared to other antibody detecting techniques which are rather tedious and sophisticated. Further studies are also recommended with regard to determination of mortality and morbidity rates caused by this disease and its impact on the national economy.

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داء الانابلازموسس في الابقار في العراق

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الخلاصة

فحص ٥٨٠ نموذج من دم الابقار للتعرف على الخمج بالطفيلي *Anaplasma marginale* واظهرت نتائج المسحات الدموية نسبة مئوية للمناطق الثلاث في القطر مقدارها ٢٦ر٦٪ وكانت هذه النسبه مرتفعة في المنطقة الشمالية قياسا الى المنطقتين الوسطي والجنوبية . وعند استعمال طريقة التلازن على البطاقة اظهرت النتائج سياقا مشابها للمسحات الدموية الا ان نسب الخمج كانت اعلى اذ بلغت ٥٣٪ و ٢٦/٦٪ و ٢٩/٦٪ للمناطق الشمالية والوسطي والجنوبية على التوالي. وتعد هذه الدراسة الاولى لتثبيت نسبة الخمج بهذا الطفيلي في القطر.