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Incidence of Camel Brucellosis in Pakistan

by Arshad Siddiqui (copyright 2009)

Abstract

The investigation was made on seroprevalence of Brucellosis in camel in Karachi between from February 2001, to April 2002. Sera of 775 camels of both sexes were tested for antibodies of Brucella abortus using serum agglutination test (SAT). The prevalence of positive sera was 1.8% among the adult one humped camel (camelus dromederius). The rate was 0% in male and 1.8% in females. The Antibodies against Brucella abortus were prevalent in one humped camel sera through out the year of the survey with incidence rate 6.17, 0, 0, 0, 3.7 and 1.9 respectively from 2001 to 2002.

Over a ten month period in mid 2001/ early 2002 samples were collected from indigenous camels in Karachi, Pakistan. Age, sex, date, and Place of sampling were recorded. A total of 775 samples were randomly selected. All sera were tested for Brucella abortus antibodies using febrile antigen direct test for detection of circulating antibodies of Brucella abortus in the serum of camel. The techniques were adopted from laboratory diagnostics co. Inc Morganville. N.j. 007751 USA.

Introduction

Brucellosis is a major zoonotic disease. Bovine brucellosis in camel is caused by Brucella abortus, in Libya and Egypt the B. melitensis is found involved in camel brucellosis. Infection is wide spread globally. The predominant symptoms in pregnant female camels are abortion and premature or full term birth of dead or weak baby camels. In general, abortion occurs during the second half of the pregnancy, often with retention of placenta and resultant metritis which may cause permanent infertility. Brucella abortus is highly pathogenic for human. Diagnosis is made through serological responses to Brucella antigen. Brucella abortus has been reported in one humped camel (camelus dromederius). Pakistan with estimated population of 1.2 million one humped camels rank 3rd among major camel raising center of Somalia and Sudan (FAO 199).

Material and Methods

- Material provided: Febrile antigen of Brucella abortus
- Transparent plain glass ring slide
- Serum pipettes
- Applicator sticks
- Test tubes
- NaCl solution 0.9%
- Mechanical rotator

The antigen stored in refrigerator at 2-8 °C was brought to room temperature. Clear transparent glass slides were taken and divided into 1-1/2 inch squares with wax pencil. Suitable pipette and amount of serum were cleared and unheated. 0.08, 0.04, 0.01, and 0.005ml serum samples were dispensed from left to right on consecutive rings or squares. The same procedure was repeated with positive and negative control samples. The antigen was shaken gently to ensure a uniform suspension and one drop was added just below each quantity of serum. The serum and antigen were mixed well with the help of applicator stick. Separate applicator sticks were used for mixing and approximately 0.5 inch by 1 inch areas were formed. Slides were rotated by hand for two to three minutes. The agglutination was observed using direct light against dark back ground. Positive serum of known liter and a negative serum were included as control.

Results and discussion

The camel population is disproportionately spreaded over the country mainly in four diversified harsh ecosystem. 1. Thai,
2.Cholistan (Punjab),
3.Thar (Sindh), and
4.Coastal mangroves, (Thatta, Badin, Karachi and districts of Sindh and Balochistan).

Brucellosis is a classical zoonosis. Major source of infection remain direct contact with infected animals or handling of carcasses. Investigations confirm the incidence of Brucellosis among camels. The highest prevalence was 1.8% in female camels when compared with prevalence rate among male camels and juvenile camels male and female tested (0%).

The camel provides a source of subsistence to the marginalized people in various camels habitat of Pakistan. They form an integral part of Nomadic pastoral operations bearing per capita availability of one camel for 14 men in dry mountains. Camel milk is an essential diet of nomads in the desert areas and in the peak seasons is sold in the cities, who are frequently in contact with infected camels or who drink camel milk and its milk products. The number of human brucellosis may increase in harsh ecosystem of Pakistan as long as the disease persists among camels. The prevalence rate in Pakistan (1.8%) was lower than those reported in Saudi Arabia (3.6%), Sudan (13.76%), Kuwait (10.8%), Ethopia (5.7%), Libya (4.1%), Somalia (1.9%), Egypt (10.7%) and Oman (3.3%) (Figure 1).

Conclusion

The investigation carried out for the presence of *Brucella abortus* among indigenous camels in Karachi, Pakistan shows a low prevalence rate. Among camels the authorities should give attention and apply strategies such as program for camel brucellosis eradication including periodic testing and slaughtering of positive reactor animals, vaccination for camels according to Pakistani field strains to control *Brucella abortus* incidence in the camels. Base where brucellosis exists in stock animals the disease resembles an occupational hazard for veterinarians, farm workers and laboratory workers.

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