Incidence of Brucellosis in Camels in a Small Holder Farm at Al Ain, United Arab Emirates

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Abstract The incidence of brucellosis was evaluated in a small camel farm at Al-Ain, UAE by using chromatographic immunoassay. The incidence was found to be 0.2%. The test was found to be of high accuracy and positive camels were confirmed to be having brucellosis by rose Bengal and other tests. Thus the study indicated that chromatographic kits available for diagnosis of brucellosis in cattle can be used for camels with high precision.

Keywords Camel, Brucellosis, Chromatographic Tests

1. Introduction

Brucellosis has been described for camels in many Arabian and African countries (Kudi et al., 1997; Abbas et al., 2002). Extensive surveys in United Arab Emirates (Afzal et al., 1994; Moustafa et al., 1998) depicted the incidence of brucellosis in camels to vary between 0.1 to 1.8%. The usual testing procedure for brucellosis involves the Rose Bengal test as a herd screening test and confirmation by the tube agglutination test and the complement fixation test (Morgan et al., 1978; Afzal et al., 1994). The use of commercially available chromatographic tests (Rapid Bovine Brucella test kit) has been depicted for diagnosis of brucellosis in camels (Kudi et al. 1997). This manuscript describes the diagnosis of brucellosis at a commercial farm at UAE using commercially available chromatographic kits.

2. Materials and Methods

Blood was collected from camels (n=1864) in vacuette tubes (Griener-Bione, 2-step serum clot activator) and evaluated for the presence of Brucella abortus. Samples were processed immediately and the presence of Brucella abortus was evaluated using Antigen Rapid Bovine Brucella test kit (Bio Note, Inc. Korea). This test is a chromatographic immunoassay for the qualitative detection of Brucella abortus antibody. As mentioned by the manufacturer, the specifically selected Brucella abortus
antigens are used in the test which enables the Antigen Rapid B Brucella Ab kit to identify *Brucella abortus* antibodies in specimens with a high degree of accuracy. Briefly, 20 µL of whole blood was added to the cuvette of the test plate by the capillary tube supplied with the kit and 4 drops of the assay diluents were added and the results were read at 20 min. The presence of two color bands within the results window indicated a positive result whereas the appearance of only one purple color band indicated a negative result. In positive cases the presence of Brucella was confirmed by collection of another blood sample and using Rose Bengal plate test at a commercial laboratory.

3. Results

During a six year period (2006-2011) a total of 1864 racing and breeding camels were tested for the presence of *Brucella abortus* using chromatographic immunoassay. A total of 1860 camels (99.79%) were found negative for brucellosis and 4 samples were found to be doubtful. Out of these doubtful cases all the 4 camels were found positive by the Rose Bengal and further tests. Two of these camels were euthanized and the other two were taken by the Food Control Authority Abu Dhabi. Thus the total incidence of brucellosis amongst camels was 0.2%.

4. Discussion

The incidence of brucellosis during the present study was 0.21%. Previous studies in United Arab Emirates have shown that the incidence of brucellosis in camels was between 1.0 to 1.5% (Afzal et al., 1994). In another survey in Al-Ain the incidence of brucellosis had declined from 5.8% in 1991 to 0.1% in 1996 (Moustafa et al., 1998). A decline in the incidence has been possible because of strict identification and eradication measures adopted by the Food Control Authorities (Moustafa et al., 1998). In the present study a commercially available immunochromatographic kits using B abortus antigen for cattle was utilized as also mentioned previously (Kudi et al. 1997) and was effective in detection of brucellosis in camels. Such assays are increasingly being adopted by many breeders in this region. Studies on the comparative efficacy of different tests used for identification of Brucella species in camel have shown marginal differences (Akhtar et al., 2010; Gwida et al., 2011). Thus the chromatographic tests used in the present study can serve as a useful adjunct for testing of brucellosis in camels.

References


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