

Short Communication

SEROLOGICAL DIAGNOSIS OF CANINE BRUCELLOSIS IN A KENNEL OF KOLKATA, INDIA

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ABSTRACT : Antibodies against *Brucella canis* was detected in 5 out of 10 Labrador bitches tested for brucellosis by 2-mercapto-ethanol rapid slide agglutination Test and lateral flow immunochromatographic assay at Kolkata, West Bengal, India.

Key words : Canine brucellosis, RSAT, LFIA.

Canine brucellosis caused by *Brucella canis* is an important cause of reproductive failure particularly in kennels. Canine brucellosis is a chronic infection that displays non-specific symptoms like abortion, still birth, repeat breeding in bitches and epididymitis, orchitis, prostatitis, testicular atrophy or infertility and sperm abnormalities in dogs. Venereal transmission may occur with undetectable embryonic deaths, abortions around 50 days gestation, prolonged vaginal discharge or rarely live *B. canis* infected puppies. The intracellular bacteria can also be associated with intervertebral disc disease (ataxia, weakness, discospondylitis) or anterior uveitis (cloudy cornea) (Shin and Carmichael 1999). *Brucella canis* is considered as zoonotic bacteria (Kazmierczak 2012) and several case reports are available regarding infection of *Brucella canis* in man, either due to close contact with infected animals or laboratory workers dealing

with the bacteria (Lucero *et al.* 2010, Shin and Carmichael 1999).

All together serum samples of 10 (ten) Labrador bitches from a kennel of Kolkata were taken. The bitches were suffering from repeat breeding, abortion and some show discospondylitis. Then all the samples were tested by 2 Mercapto-Ethanol Rapid Slide Agglutination Test (2ME-RSAT) as described by Carmichael and Joubert (1987) for detection of brucella antibody. Agglutination of antigen in presence of antibody were seen 5 (five) out of 10 (ten) samples. Then all the samples were tested by Lateral Flow Immunochromatographic Assay (LFIA) as followed by Kim *et al.* (2007) with some modification. Take 10ml of serum to the dark score line of capillary tube. Slowly add 10ml of serum to the sample well with capillary tube with a score line for volume of 10ml and then add 2-3 drops with bottle containing diluent buffer. In positive case

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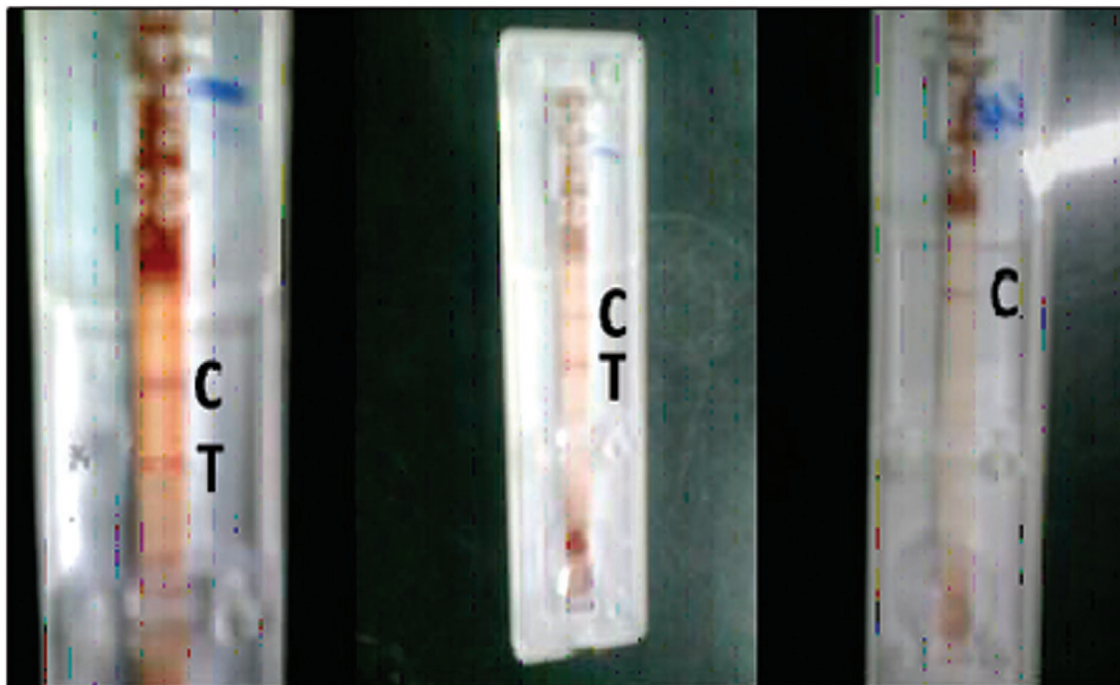


Fig. Showing results of *Brucella canis* immunochromatographic assay for 2 (two) positive and 1(one) negative sample. C= Control band, T= Positive band.

a purple band is formed in the result window of the kit. Interpret test results at 20 (twenty) minutes.

Out of 10 (ten) samples 5 (five) were found positive for *B. canis*.

The antigen rapid C brucella antibody test kit is a chromatographic immunoassay for the qualitative detection of *B. canis* antibody in whole blood, plasma or serum. The kit manufactured by BIONOTE, Inc. 2-9,Seogudong Hwaseong-si, Gyeonggi-do, Korea.

Diagnosis of canine brucellosis is difficult because of unstable serum antibody titres that vary from individual to individual as well as between different methods used for their detection. The objective of this work was to evaluate the clinical utility of the Immuno

Chromatography Assay (ICA) for sero-diagnosis of dogs / bitches suspected of having brucellosis and results were compared with Rapid Slide Agglutination Test (RSAT) (Kim *et al.* 2007).

The results of this study showed that sensitivity and specificity of the ICA are comparable with those obtained by using conventional serological test for brucellosis. In conclusion, the ICA kit provides a handy and accurate tool for the rapid sero-diagnosis of Canine brucellosis.

The RSAT is most commonly used to evaluate the status of dogs before breeding or whenever brucellosis is suspected. Although this test is sensitive but false positive results have been found (Carmichel *et al.* 1984).

While this preliminary evaluation ICA test yielded promising result, it would be necessary to test a higher number of samples at least in duplicate to draw conclusion on the reliability of this test as a screening tool for canine brucellosis (Wanke *et al.* 2012).

Optimal control measures for canine brucellosis in breeding kennels environment in and around the metropolis like Kolkata include regular testing and removal of infected animals, breeding management changes and environmental controls (Kazmierczak 2012). For pets in house holds, control measures are not as well established, and are complicated by the human animal bond and the uncertainty about the actual risk that an infected dog poses to its owners. Good hygiene is also likely to decrease human exposure, specially during birth and abortion but also during contact with urine, vaginal secretion and other potential sources of *B. canis* (The centre for Food Security and Public Health 2012).

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