

SEROEPIDEMIOLOGICAL STUDIES ON BRUCELLOSIS AMONG VETERINARIANS IN PUNJAB STATE OF INDIA

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Brucellosis is one of the most important zoonotic disease and is a serious occupational and public health hazard. In present investigations serum samples of 418 veterinarians were screened for Brucella agglutinins. The agglutinins ranging from 20 I.U./ml to 2560 I.U./ml were found in 107 (25.89%) individuals while 82(19.8%) had diagnostic titer of 80 I.U./ml or more. The sensitivity of DOT-ELISA was compared with RBPT, STAT and CFT for serodiagnosis of human brucellosis. The sensitivity of DOT-ELISA was almost the same as of RBPT but relatively more sensitive than CFT and STAT. Out of 107 persons having Brucella agglutinins only 49(45.79%) had symptoms of brucellosis ranging from intermittent fever, backache, joint pain, arthritis, night chills, anorexia & orchitis. All the infected persons gave good response to treatment with combination of broad spectrum antibiotics as suggested by W.H.O. resulting in the decrease of titre of Brucella agglutinins.

Brucellosis is one of the most important zoonotic disease and is a serious occupational and public health hazard. It causes great economic loss to dairy farmers by causing abortion, infertility, still birth in animals and reduction in milk yield. It causes undulant fever in human beings consuming infected milk and milk products. Brucellosis can be transmitted to veterinarians coming in direct contact with animals at time of abortion or birth of infected young.

In present study 418 serum samples (380 from veterinarians and 38 from animal handlers) were collected from all districts of Punjab state. All 418 serum samples were analysed for presence of *Brucella* agglutinins by Rose Bengal Plate Test (RBPT), Plate Agglutination Test (PAT) and Standard Tube Agglutination Test (STAT) as recommended by Alton *et al.*, 1975. One hundred serum samples were also analysed by Complement Fixation Test (CFT) as described in Public Health Monograph No. 74 (1965) of U.S. Public Services and by DOT-ELISA test. Attempts were made to isolate *Brucella* organisms on serum-dextrose agar and glycerol-dextrose agar.

On serological examination of 418 serum samples 107 (25.89%) were found positive for *Brucella* agglutinins ranging from 20 I.U./ml to 2560 I.U./ml while 82(19.8%) had diagnostic titre of 80 I.U./ml or more. Various workers has also reported high incidence of brucellosis in veterinarians. (Gilbert *et al.*, 1980; Rahman *et al.*, 1983 ; Abo-Shehada *et al.*, 1991 and El-Gohary and Hattab, 1992). On comparing sensitivity of various tests for serodiagnosis on one hundred randomly selected serum samples it was found that 39 were positive by RBPT, 38 by PAT, with STAT 35 were positive while one sample was doubtful. By using CFT 22 samples were positive while two gave doubtful titre and by DOT-ELISA 40 samples were positive. So sensitivity of DOT-ELISA was almost the same as of RBPT but relatively more sensitive than CFT and STAT. Rose Bengal Plate Test had been recommended by several investigators (Chernysheva *et al.*, 1980) for rapid diagnosis and demonstration of antibodies in early stage of brucellosis in man.

Out of 107 persons having *Brucella* agglutinins only, 49 (45.79%) had clinical symptoms of brucellosis ranging from intermittent fever, back ache, joint pain, arthritis, night chills, anorexia and orchitis. Incidence is high as the serum samples were collected from veterinarians which are at higher risk to brucellosis always. Attempts to isolate *Brucella* organisms from their blood failed as disease was diagnosed not in early febrile stage. Absence of disease in other may be due to acquired immunity which might be boosted at intervals by repeated exposures. All the infected persons gave good response to treatment with combination of broad spectrum antibiotics as suggested by W.H.O. resulting in the decrease of titre of *Brucella* agglutinins.

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