Evaluation Prevalence of Brucellosis in Horse
Hamadan of Iran

Navab Ghobadi1*, Ali Reza Salehi2
1. Department of Agriculture (Animal science), Payam noor University Of Iran, Po-Box 19395-3697
2. Veterinary employe of hamedan, Iran

*Corresponding author email: navabd21@yahoo.com

ABSTRACT: In this study was Evaluation to determinate the seroprevalence rate of horses brucellosis in between May 2011 and December 2012 in hamedan, Iran. serum samples from 200 horses were analysed with the Rosebengal test and the tube agglutination test. Sera from one horse were found positive by rosebengal test and tube agglutination test, and therefore the prevalence rate was 0.005%. In horses, the highest individual seroprevalance was in an animal kept close under the intensive system, without any animals. The zoonotic aspects of brucellosis in the horses must be considered because the disease is important for a public health stand point. The present study documents the first serological evidence of Brucella infection in horses in hamedan of Iran.

Key words: Brucella; rose Bengal; Hamedan; Horses, Document

INTRODUCTION

Brucellosis is an infectious disease caused by various gram-negative bacteria of the genus brucella (acha et al., 1980). This disease is the cause of significant economic losses in livestock production due to reproductive disorders and reduced production of affected animals (santellano et al., 2004). Brucellosis is still one of the world’s major problems as a topical disease, both in human beings and in animals. It is caused by various species of Brucella (boussetta, 1991). Naturally acquired Brucella infection in horses associated with infected cattle (B. abortus) and swine (B. suis) and horizontal transfer has been demonstrated (forbes, 1990). But horses appear to be more resistant to infection than cattle, swine, and goats. The seroprevalance of brucellosis in various animals such as cattle, sheep, goats, camels, poultry, and human were described in Iran (bokai, 2008; rabbani, 2008; sabbaghian, 1973; makarem, 1982). Because there is no published report about brucellosis in horses in Hamedan, this study was show first epidemiological pattern of brucellosis in horse in hamedan of Iran.

MATERIAL AND METHODS

In this study is between May 2011 and December 2012, a total of 200 healthy horses were randomly selected to determine the seroprevalence of brucellosis and risk factors associated with the disease horses. The survey was carried out in a cold region of Hamadan, Iran. Blood samples were obtained by veni puncture and transferred to the laboratory under chilled conditions, as soon as possible. Serum was isolated by centrifuging the blood samples at 2000g. All serum antibodies were tested for Brucella genus using slide agglutination by rosebengal test at cell concentrations and tube agglutination test (TAT) by 2-mercaptoethanol, using whole cell antigen (Razi Vaccine Serum Research Institute) for the presence of antibodies against B. abortus strain. The data were analyzed with the SPSS (Statistical Package for Social Sciences) for Windows version 11.5 software and confidence level of %95 were assumed.

RESULTS

In this study 200 animals selected in these areas belonged to various owners. The seroprevalence of brucellosis varied significantly (c² = 67.32; P < 0.005) from 0% to 0.05% in various districts of the state. Sera from one horse were found positive by rosebengal test and TAT. Of these reaction The TAT results in horse number one was 1/40 also 2-mercaptoethanol test result were 1/40. The study also investigated the prevalence of horses brucellosis in different districts. A correlation and regression analysis was carried out for prevalence
of disease in various districts in relation to its horse population. There was no correlation disease and horse population \( P<.005 \).

**DISCUSSION**

Brucellosis, a zoonotic disease, is an important threat to human health and causes substantial economic losses to agricultural industry (Nicoletti, 2007). In the previous studies prevalence of sero positivity in horses have been reported as between 0-20.7\% by RBPT and 0-17.7\% by SAT (Omer et al., 2000; Acosta-González et al., 2006; Wadood et al., 2009; Tahamtan et al., 2010; Ehizibolo et al., 2011). Most human infections result from physical contact with infected animals (Gul et al., 2007). It is reasonable to speculate that aborted material and infected vaginal discharges of cattle, swine could be a factor in the spread of Brucella to horses and vice versa (Baek et al., 2003). Infection with B. abortus should be considered in cases of supra spinatus bursa, also known as fistulous withers, the most common manifestation of brucellosis in horses (Wesse, 2002). In Turkey found 42.40\%, and 1.89\% of horse sera as sero positive by Plate test and RBPT, respectively and 29\% of those sera have shown a titer value between 1/10-1/20 (Izgur et al., 1998). performed a study on 74 horses in Hakkari region and reported that 9.5\% horses had 1/40 or higher titers while the rest of the horses had titer values between 1/10-1/20 by SAT (Göz et al., 2007). In other study in total of 120 horses were screened for brucella infections in Mashhad, Iran, by the rosebengal test and the tube agglutination test. Sera from three horses were found positive by rosebengal test and tube agglutination test, and therefore the prevalence rate was 2.5\%. In horses (Yahya et al., 2010), the current study matches with Yahya et al, the contagious horses to brucellosis in khorasan as compared with hamedan province was observed much vaster. this may relate to variety of factors such as: Not caring hygienic issues, the more frequently contact of sheep with horses, which are living near border line cities. In this study serum samples from 200 horses were analyzed with the Rosebengal test and the tube agglutination test were found to be sero positive by RBPT while 0.005 the horses showed a titer value 1/40. This less contagion of animal result from many factors in this province like: much caring of hygiene within horses, vaccination of domestic animal to brucellosis keeping horses farm away from domestic animals. The disease in high endemic regions such as Africa, Mediterranean, Middle East, parts of Asia, and Latin America remains an uncontrolled problem. Brucellosis in horses has been reported in Middle East from Egypt (5.88\%), India (12.89\%), Pakistan (5.78\%), (Makarem, 1992; Omer, 2000; Plummet, 1982; Sabbaghian, 1973; American, 1999). There is no vaccine approved for use in horses in Iran. There is also no effective treatment form brucellosis in infected animals (American, 1999). Therefore, brucellosis continues to be a major problem in Iran despite the existence of a test and slaughter strategy program for eradication.

**CONCLUSION**

Consequently, the results indicated that brucellosis is not prevalence widely among horses. there for horses should not be shelter with ruminants. Benig a zoonotic disease brucellosis has been eradicated from most of the developed countries through test and culling policy. Vaccination in animal against this disease has been used successfully in most countries. Therefore, be considered because the diseases important from the public health standpoint. When the disease exists in horses, which is a reservoir (Acosta et al., 2006). it is a concern for human public health.

**ACKNOWLEDGMENTS**

This research project was supported by Hamadan Veterinary Association and laboratories work on this project.

**REFERENCES**


