Detection of Infectious Bovine Rhinotracheitis Antibodies in Cattle by Avidin-Biotin ELISA

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Infectious Bovine Rhinotracheitis (IBR), caused by Bovine Herpes Virus-1 (BHV-1) is the most economically important disease of cattle. In India, it was first reported by Mehrotra et al. (1976). The disease causes abortion, infertility, encephalitis, conjunctivitis, infectious pustular vulvo-vaginitis/balanoposthitis, respiratory problems and drop in milk production. Renukaradhya et al. (1996) detected 51.6% seropositivity to IBR from cattle in three Southern states of India. The present study describes the prevalence of IBR in cattle.

Materials and Methods

213 random whole blood samples were collected, during the period between 2010 and 2011, from cattle in and around Chennai city. From these, 157 blood samples were from organized cattle farms and 56 from slaughter house, Chennai. Cattle from organized farms comprised of different breeds of cattle i.e. Tharparkar, Jersey cross, Gir, Deoni, Kangayam, Sahiwal and Non-descript. All the serum samples were subjected to AB-ELISA technique. Infectious bovine rhinotracheitis (IBR) antibody specific indirect AB-ELISA kit was procured from the Project-Directorate on Animal Disease Monitoring and Surveillance (PD-ADMAS-ICAR), Hebbal, Bangalore. The optical density (OD) value was calculated at 492 nm wavelength using spectrophotometer. The percentage positivity value greater than 45% in the test were considered positive and the value less than 45% were considered negative.

Results and Discussion

36 out of 157 and 8 out of 56 serum samples were tested positive for IBR in cattle. The over all sero-prevalence of IBR in organized farms were recorded as 22.9%, while slaughter house sero-positivity was 7%. Animals maintained in unorganized farms showed significantly higher rate of prevalence (Koppad et al., 2007; Rajesh et al., 2003) and were in contrast to the result of the present study. Jain Lata et al. (2008) and Sharma et al. (2009), reported higher rate of prevalence in organized farms than cattle in unorganized farms. Breed-wise details are very sparsely reported, if there have been any details available, there has been a lot of variation in breeds maintained in the particular area. Among different breeds of cattle screened, 50% (5/10), 21% (8/38), 25% (5/20), 23.5% (4/17), 35.7% (5/14), 15% (3/20), 15.7% (6/38) were positive in Tharparkar, Jersey cross, Gir, Deoni, Kangayam, Sahiwal and Non-descript cattle, respectively. Breed-wise data for slaughter house samples were not obtained. Dhand et al. (2002), observed that higher rate of sero prevalence in organized farms could be due to frequent exit and entry of animals in organized farms and overcrowding of population. The present study identified a over all sero prevalence of 22.9% for IBR in cattle in organized farms.

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Dermatosis caused by individual mite in isolation have been reported by many workers in rabbits and rodents (Maiti et al., 1995; Singla et al., 1996; Farmaki et al., 2009). This article reports dermatosis due to mixed infestation of Notoedres, Psoroptes and Cheyletiella sp. mites in rabbits and its therapeutic management.

Materials and Methods

Study was conducted in a laboratory animal unit having 14 rabbits suffering from skin lesions since last one month. Clinical signs were recorded and skin scrapings were collected from affected sites of the animals and processed in 5% KOH solution for microscopic examination. Skin scraping and hair samples were also sent to diagnostic laboratory for dermatophyte examination. Mites were identified on the basis of morphology specially of legs, suckers and position of anus (Soulsby, 1982). The animals were treated with ivermectin at 400 μg/kg bw s/c every 10 days for three occasions using tuberculin syringe, enrofloxacin at 100 mg/l of drinking water for 5 days and multivitamin preparation in drinking water for 30 days. Care taker was advised to clear laboratory animal cages regularly including daily brushing and replacement of beddings. It was also advised that newly purchased healthy animals and young ones should be kept separately or should be treated with same dose of ivermectin.

Results and Discussion

All the affected animals were alert and active and had normal appetite. The skin lesions were characterized by alopecia, hypotrichosis, variable erythma, scaling, exudation and thick