SEROLOGICAL EVIDENCE OF LEPTOSPIRAL ANTIBODIES IN DOGS IN PERIPHERAL AREAS AROUND CHENNAI

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Leptospirosis, a worldwide zoonosis, has been gaining importance as a re-emerging disease. The disease, occurring in man and animals is caused by antigenically distinct serovars of Leptospira interrogans (Greene, 1995). The incidence is significantly higher in countries with warm climate than in temperate regions (Ratnam, 1994). Further, the incidence of the disease peaks during rainy season in warm regions (Ventataraman et al., 1992). Most cases of canine leptospirosis occur due to serovars canicola and icterohaemorrhagiae (Baldwin and Atkins, 1987). However, a gradual change has occurred in prevalent serovars with pomona, grippotyphosa and bratislava being reported more commonly (Scanziani et al., 2002).

A knowledge of the prevalent serovars and their maintenance hosts is essential to understand the epidemiology of the disease in any region (Hartskeerl et al., 1996). The present communication throws more light on the predominant serovars of Leptospira in the dog population of Madhavaram area, North Chennai.

Serum samples were collected from forty eight dogs brought to Veterinary University Peripheral Hospital, Chennai with the symptoms of anorexia, fever, vomiting, dehydration, sub-lumbar pain and in some dogs, icterus. Sera were tested by microscopic agglutination test (MAT) using a panel of 12 Leptospira antigens namely icterohaemorrhagiae, canicola, grippotyphosa, hebdomadis, pomona, autumnalis, pyrogenes, tarassovi, ballum, javanica, australis and hardjo. A titre of 1 : 100 were regarded as significant (Vijayachari et al., 2001). Those sera samples which gave the highest titre to serovars were only taken into account.

The result of MAT indicated that 30 (62.5%) sera had significant microscopic agglutination titre. The sera reacted to different serovars namely australis 22 (73.33%), canicola 8 (26.66%), javanica 6 (20%), hebdomadis 6 (20%), ballum 5 (16.66%), tarassovi 4 (13.33%), autumnalis 4 (13.33%), icterohaemorrhagiae 3 (10%), pyrogenes 3 (10%), hardjo 2 (6.66%), pomona 1 (3.33%) and grippotyphosa 1 (3.33%). Fifteen sera reacted to two or more serovars.

Most clinical cases of Leptospirosis in dogs are caused by serovars canicola, icterohaemorrhagiae, grippotyphosa and pomona (Rentko et al., 1992). In addition, other serovars namely australis, javanica, ballum, hardjo, autumnalis and pyrogenes were recorded by Senthilkumar et al. (2006). Immunity to leptospirosis is largely humoral and is relatively serovar specific (Adler et al., 1977). Thus, immunization protects against infection caused by the homologous serovar or antigenically similar serovars only. Vaccines must therefore contain serovars representative of those present in the population to be immunized. Since immunization plays an important role in the prevention of the disease, identification of the predominant serovars in each region is essential. The commercial vaccine being used at present contains Leptospira canicola, L
icterohaemorrhagiae, L. grippotyphosa and L. pomona serovars. Since, immunized dogs may be infected with serovars other than those contained in commercial vaccines (Brown et al., 1996), the authors advocate the use of a polyvalent vaccine which includes other predominant serovars in addition to the existing ones for effective protection against Leptospirosis as suggested by Adesiyun et al (2006).

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REFERENCES


