



SCREENING OF DOGS FOR RABIES VIRUS EXCRETION

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Abstract

Five hundred dogs, belonging to various categories viz., healthy (vaccinated and non-vaccinated), sick (vaccinated and non-vaccinated) and stray, were screened for the possible excretion of rabies virus in an enzootic area in Thrissur, Kerala. These dogs were screened by detecting rabies viral antigen in salivary smears and corneal impression smears using direct fluorescent antibody test. The study revealed no non fatal, chronic or abortive rabies infections in dogs. No dogs could be detected with persistent rabies viral excretion without succumbing to rabies.

Key words: Rabies virus excretion, dogs, screening

Rabies is fatal, non-suppurative, viral encephalitis of all warm blooded animals. In endemic areas, the infection is maintained in animal population and transmitted to people primarily by bite or rarely through contamination of abraded skin or mucous membranes. In India alone, 17,800 human deaths occur annually which accounts to 40 percent of global report. Up to 96.2 per cent of the human rabies in India is transmitted by dogs and the rest by cats and other animals (WHO, 2004).

Documented cases of dogs outliving their victims in India and other developing countries suggest a possible chronic excretory state for the virus, which complicates the standard management. Veeraraghavan (1970)

isolated rabies virus on 14 occasions from the saliva of a dog that remained healthy after biting a man, who died of rabies. Since human deaths are reported from such 'prolonged excretors', the possibility of a chronic carrier state for fatal strains of rabies virus need to be investigated (Dutta and Dutta, 1994).

The present study was undertaken to assess rabies virus excretion, if any, in apparently healthy and sick dogs suffering from other diseases.

Materials and Methods

The study was conducted at the Department of Veterinary Epidemiology and Preventive Medicine, College of Veterinary and Animal Sciences, Mannuthy, Thrissur. Corneal impression and salivary smears were obtained from 407 healthy dogs and 93 sick dogs showing symptoms like fever, anorexia, vomiting and diarrhoea brought to University Veterinary Hospitals, Kozhikode and Mannuthy, Kerala Agricultural University. These impressions were subjected to fluorescent antibody test (FAT) (CDC, 2003). Out of the 500 dogs, 41 were stray dogs and 151 were immunised and were at different levels of immunity. The detailed clinical history and prophylactic anti-rabies vaccination status were collected.

The validity of the procedures was tested by screening dogs showing symptoms suggestive of rabies like salivation, dropped jaw and behavioural changes. Twelve dogs

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(control group) with definite history of rabid dog bite were thus examined. The saliva and corneal impression smears from these dogs were taken and subjected to FAT. After death, the brain samples were collected for confirmation.

Results and Discussion

All the five hundred dogs were negative for rabies virus excretion and no incidence of recovery, abortive or chronic form of the disease was observed in the control group. All the control animals were positive for rabies on FAT. These findings were not in agreement with those of Veeraraghavan (1970), Fekadu (1975), Aghomo *et al.* (1989) and Adeiga and Audu (1996), but concurred with those of Bell *et al.* (1971) who conducted studies to test whether apparently normal dogs excreted rabies virus in the Federal District of Beunos Aires where rabies was endemic. None of the 579 salivary samples from 129 dogs tested for excretion of rabies virus was positive by FAT. The present result also concurred with that of Vaughn *et al.* (1965) wherein they could not detect the presence of rabies viral antigen among randomly screened dogs.

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