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RESEARCH ARTICLE

A RETROSPECTIVE STUDY OF CANINE RABIES INCIDENCE IN CHENNAI

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Abstract

An epidemiological study on canine rabies and its determinants in Chennai from January 2010 to December 2012 is reported herewith. A total of 204 cases suspected for rabies of which 148 dogs were diagnosed positive (81.76%). More than 50% of the dogs were non-descript with the susceptible age group being 2-5 years. The months of February and March reported greater incidence coinciding with the breeding period leading to greater incidence in male dogs than females.

Introduction

Rabies is one of the oldest recognized diseases affecting all warm-blooded animals and the most important and feared zoonotic disease in India (Chaudhuri, 2005). Each year, more than ten million people, many of whom are unvaccinated, endure protracted anxiety after exposure to an animal with suspected rabies (Deshmukh, 2004).

India has approximately 25 million dogs, with an estimated dog: man ratio of 1:36.2. These dogs can be broadly grouped into 4 major categories namely; pets (restricted and supervised); family dogs (partially restricted, wholly dependent); community dogs (unrestricted, partially dependent); and feral dogs (unrestricted, independent). In India most dogs, perhaps 80%, would fall into the last 3 categories (Menezes, 2008). Thorough documentation of canine rabies incidence and prevalence in India is required for better application of control strategies.

Material and Methods

Rabies suspected cases that were brought to Madras Veterinary College, Teaching Hospital were quarantined and held under observation for a period of up to 15 days. During the observation period the documentation of the clinical signs are performed by the clinician at the Rabies Observation Ward (ROW), Department of Clinics, and Madras Veterinary College. Brain samples were collected from cases that died during the observation period and tested for rabies antigen using Sellar's stain for Negri body identification and by direct Fluorescent Antibody test for antigen detection. Dogs that were alive beyond the observation period (of 15 days) were vaccinated and handed over to the owner. The data for this report has been collected from the case records maintained at ROW from 204 cases suspected for rabies brought to the hospital during the period from January 2010 to December 2012. The dogs included in this study were not vaccinated against rabies; the data was analyzed determine the pattern of canine rabies in Chennai city during the study period.

Result and Discussion

During this study period a total of 204 animals were suspected and quarantined, of which 181 were dogs. Among the 181 dogs suspected 148 (81.76%) were diagnosed positive for rabies and 33 (18.23%) were diagnosed negative. The highest incidence of rabies was observed in the age group 2 to 5 years (38.02%). The greater risk for suffering and transmitting the disease in this age group is attributed to the territorial behavior and also their reproductive activity (Narayan, 1985). The data also showed young (0-6 months) nondescript puppies and older pedigree dogs being more

susceptible to rabies. This could be due to greater initial interest in the management of a pedigree dog. Sex wise occurrence in the recorded cases revealed 57% and 32% positivity in male and female respectively with similar observations being made by Rajanet al., (1990) and Sudarshanet al., (2001).

Breed wise analysis of the data showed that non-descript dogs compromised 76.42% of the positive canine rabies cases while large and small pedigree dogs comprised of 12.60% and 10.97% respectively. This entails the reluctance or ignorance of rabies vaccination by non-descript dog owners. Greater incidences were recorded during February and March (10.50% and 12.71%). Similar incidences were also reported in earlier studies reported during the period from 1992 to 2002 in Chennai (Gunaseelanet al., 2004). The probable reason is that this period coincides with the terminal part of the breeding season in dogs and also the high activity and interaction of the dogs during this period (Narayan, 1985).

Most positive cases were reported from North Chennai (46.11%) followed by Central Chennai (27.67%). Maximum dog bites to humans were also reported from North Chennai during October and November, 2011 (Yale et al., 2013). It is important to note that only 11.24% of the owners sought veterinary consultation within 2 to 5 days of dog bite and no cases were reported within 0 to 1 day post bite. The quarantine period of positive cases varied from 0 to 15 days; maximum number (33.16%) of cases succumbed to the disease in 0 to 1 day indicating that 33.16% of the owners waited till severe clinical signs were noticed or were unaware of a bite to their dogs.

The commonly observed clinical signs in the cases admitted for the observation included hyperptyalism, locked jaw, neurological signs, change in behaviour, change in voice, excessive barking, dull, not responding to call, vacant look, anorexia and cyanotic tongue. Hyperptyalism was the most observed clinical sign and recorded in 21% of the positive cases.

Age, sex, area and seasonal pattern of rabies was observed and a variation in time to seek consultation and clinical signs were also observed. This study shows that rabies is highly prevalent in pet dogs and stray dogs and lack of awareness/comprehension of owners to vaccinate their dogs. Educating owners about rabies vaccination is highly imperative at this stage as pet dogs are a closer source of rabies to human than stray dogs. This information is a result of only a three year study, a more detailed and long term analysis is required for better understanding the determinant of rabies in Chennai city.

Table 1: Percentage distribution of data

Percentage Distribution of data	**%**
Sex distribution	
Male dogs	43
Female dogs	57
Age distribution	
0 to 6 months	26.56
6 months to 1 year	17.71
2 years to 5 years	38.02
5 years and above	17.71
Breed wise distribution	
Large pedigree dogs	12.60
Small pedigree dogs	10.97
Non-descript	76.42
Cumulative Month distribution	
January	6.08
February	10.50
March	12.71
April	7.73
May	11.60
June	8.84
July	7.18
August	5.52
September	8.84
October	4.97
November	6.08
December	9.94

Area distribution	
North Chennai	46.11
South Chennai	12.13
Central Chennai	27.67
Outskirts or outside of Chennai	14.07
No. of days taken to seek consultation	
2-5 days	11.24
5-10 days	58.43
10 days above	30.34
No. of days in ROW	
0 to 1 day	33.16
2 days	28.42
3 days	18.42
4 to 10 days	16.32
11 days and above	3.68
Clinical Signs	
Jaw Paralysis	8.33
Salivation	21.03
Anorexia	12.30
Vacant look	1.98
Hyper aesthetic	7.54
Not responding to call	7.54
Ferocious/Aggressive/biting owner	7.54
Biting inanimate objects	5.56
dull	5.95
Voice change	4.37
Tongue colour change	2.38
Seizures	1.19
Ataxia/Staggering gait	2.78
Recumbent	11.51

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