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RESEARCH ARTICLE

STUDY OF DOG BITE HUMAN RABIES AT COMMUNICABLE DISEASE CENTER (CDC)  
IN A TERTIARY CARE HOSPITAL, NORTH EAST REGION OF INDIA

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ABSTRACT

**Objective:** 1) Aim of knowing the incidence of Human rabies. 2) To assess the level of consciousness on wound treatment. 3) Also to assess the attitude, knowledge, regarding treatment, vaccination and other parameters of rabies. 4) To study the yearly trend of rabies among different age and sex groups. 5) Observe the exposure site of bite and time taken to develop rabies from the day of exposure. **Methods:** The study was designed on the basis of epidemiological and clinical evaluation among the admitted rabies cases in communicable Disease Center, B.R. Ahmedkar Hospital, District Govt. Hospital, West Tripura during the year 1995 -2000.

**Results:** A total of 127 human Rabies cases were reported in the last 5 years between 1995 to 2000. out of this, 67% are male and predominantly seen among 0-19 years of age. All bites are belonging to street dog only. 66% cases had exposure to lower limb (mostly) and the rest is on upper limb and head and neck. 88% of the rabies of the cases is having no treatment etc. Only 3% cases had regular ARV vaccination and 8 % were irregular, incomplete vaccination. 3.14% cases of rabies patient shows vaccine failure. About 43.30% cases developed rabies symptom and sign from the day of exposure between 30-90 days and rest 34.64% cases were in between 121 -365 days. 78% (1 case) had exceptional history of development of rabies after 17 years from the date of exposure.

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INTRODUCTION

Rabies is viral zoonotic disease and uncontrolled killer of human life in the developing country particularly in South East Asia. The disease mostly affected among lower socioeconomic group. Dog is greatly loved and protected by vast majority of people. (World Health Organization Report – 1998) WHO officially reported 30,000 human rabies deaths in India annually (World Health Organization Report 2002). It accounts to 60% of global report of 50,000 deaths in a year. More than 20,000 people die in India due to rabies. Accounts to 60% of total death due to rabies worldwide (APCRI Journal Report - 2006) In India it is estimated that one person dies from rabies every 30 minutes. Human rabies still practically a cent percent fatal disease (Sudarshan *et al.*, 2005) Human death due to rabies in most instances is very painful and agonizing. Once the symptoms and sign appear these patients usually survive for 3-7 days. As it is a fatal disease patient should get adequate comfort care with suitable and appropriate emotional and physical support (Sudharshan *et al.*, 2007; World Health organization 2005) Stray dogs are responsible for 90% cases of rabies in India (Singh *et al.*, 2001). More than 99% of all human deaths occur in the developing world

(World Survey of Rabies 1996). In India about 17.4 million exposures occur annually among human (APCRI, 2004). In this study in average 21 cases per year were admitted in CDC, communicable disease Center, of the state, Tripura, ultimately all rabies cases were died.

MATERIALS AND METHODS

127 diagnosed cases were admitted in CDC, B.R.Ahmedkar hospital. Agartala city during last 5 years from 1995-2000. The study is retrospective but reflects the true incidence. The study protocol contains the data of age, sex, address, date of admission, duration of illness, animal involved, history of illness, type of animal involved, history of local wound treatment, soap wash, vaccination, immunoglobulin etc were carefully taken from case sheet in details from record section for the period of 5 years.

RESULTS

Total 127 rabies patients were admitted during the year 1995-2000 (Table- 1). Out of 127 rabies cases 85(66.92%) were males and 42 (33.07%) were female. (Table 2). Out of 127 cases 46(36.22%) victims were in age group 0 -9 years, 44(34.22%) in 10 -19 yrs, 12(9.44%) were in between 20-29yrs, 9 (7.08%) were in 30-39 yrs, 14 (11.02%) were among

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**Table 1. Month wise Yearly distribution of Rabies Cases reported during the period 5 years**

Month	Year					
	1995	1996	1997	1998	1999	2000
January -	0	1	1	2	0	1
February-	2	2	1	1	4	2
March -	1	2	2	4	8	1
April -	6	1	1	2	3	2
May -	6	1	1	1	3	3
June -	0	1	1	1	1	2
July -	5	2	2	4	1	2
August -	2	1	1	1	5	1
September -	0	3	3	2	4	1
October -	1	1	1	0	1	0
November -	0	1	1	1	1	0
Total -	23	26	15	22	32	19
All Total						127
Average per year						21

**Table 2. Sex Distribution among the Rabies Cases During the period of 5 years**

Year	Male	%	Female	%	Total
1995	15	65.21	8	34.78	23
1996	10	62.55	6	37.55	16
1997	11	73.33	4	26.66	15
1998	15	68.18	7	31.81	22
1999	20	62.55	12	37.60	32
2000	14	73.68	5	26.31	19
Total	85	66.92	42	33.07	127

**Table 3. Showing age distribution among Human rabies patients during period 5 years**

Age (years)	1995	1996	1997	1998	1999	2000	Total	%
0-9	7	8	6	5	13	7	46	36.22
10-19	9	5	5	9	10	6	44	34.64
20-29	2	x	2	3	4	1	12	9.44
30-39	2	2	1	2	1	1	09	7.08
40-49	1	1	x	1	x	1	04	3.14
50-59	1	x	x	x	x	1	02	1.57
Total							127	

**Table 4. Sites of Exposure of total 127 Rabies Cases**

Site of Exposure	No. of Cases	Percentage
Bite on face & neck	17	13.38
Bite on upper limb	26	20.47
Bite on lower limb	84	66.14

**Table 5. Time taken for development of 127 Rabies cases from the day of exposure**

Days taken for Development of rabies	No of patients	Percentage
0 - 30 days	12	9.44
31 - 90 days	55	43.30
91 - 120 days	15	11.81
121 - 365 days	44	34.60
After 17 years	01	.78

**Table 6. History of Treatment of 127 rabies patients**

Treatment Taken	Treatment not taken	Soap water wash locally	Vaccination not completed Irregular	vaccination Completed	No vaccine /ujja,Banani no mantra	Total
14	111+1	104	10	4	106	127
11.02%	87.40 %	81.88%	7.80%	3.14%	83.46%	

40-59 yrs 57 % (Table 3). Maximum number of patients 84(66.14%) had exposure to dog bite in the lower limb, 26(20.47%) were in the upper limb and 17 (13.38%) were in head & neck among the total number of cases. (Table 4). Out of 127 mostly 112(88%) patient did not take any kind of treatment, 10 (7.87%) cases were taken vaccination without completing the full course. The number of days for development of rabies from the date of exposures are 0-30 days, 12(9.44%), 31 – 90 days 55(43.30%), 91 -120 days 15 (11.81%) and 0-29 days 12(9.44%) respectively. One case (.75%) reported after 17 yrs from the date of exposure

## DISCUSSIONS

In the present study it is documented from Table -1 that yearly distribution of human Rabies cases in Tripura state, West District were average twenty one (21) per year where dog is responsible mainly having 96.2% (Sudarshan *et al.*, 2005). Dogs are the common biting animal 97.3% (Dhillon Rohini, Kumar Rajnish- M.V.I.D hospital report –Delhi) as documented. In this study the dog is also the prime source 98% for rabies which is similar with their studies. Rabies cases were significantly higher 31.92% among the children age group 5-15 years (Dhillon Rohini, Kumar Rajnish- M.V.I.D hospital report –Delhi). The present Study is coming close with the studies of (Behara *et al.*, 2009; Dhillon Rohini, Kumar Rajnish- M.V.I.D hospital report –Delhi; Behara *et al.*, 2009).

Males are dominant 66.14% in this study which are evident from other studies (Sudharshan *et al.*, 2007). WHO reports study of affected victim for rabies 71.1% Males were more affected 80.8% (Lakhan Pal and Sharma, 1985). Therefore male is the universal victim till date. The site of exposure is more common in lower limb 66.14% in the present study which are in agreement with the other studies (Sudarshan *et al.*, 2005) were also showed that lower limb bites are more common 56.2% than other sites. In the studies at MVID hospital Delhi .emphasized that most common site of bites are prevalent to lower limb as compared to other sites (Dhillon Rohini, Kumar Rajnish- M.V.I.D hospital report –Delhi). The development of rabies from the day of exposure was maximum in between 30-90 days, 43.30%. The findings of present study is close to the studies of paul and Sharma where they have shown the maximum cases 61.8% were developed rabies between 30 and 120 days (Lakhan Pal, and Sharma, 1985).

The present study also coins similarity with the study of CRI Kausali, Himachal Pradesh (Rabies Report of CRI Kausali, Himachal Pradesh- 1998-2000) 82% rabies patient used soap water wash in to the local wound in this study which is not co relating with WHO multicentric report where only 39.5% used soap water in the wound locally (Sudarshan, 2003; 2004) 88% cases did not take any vaccination, ARV in the present study, It is close with WHO survey study in India that 80% rabies victim did not seek any ARV vaccine ((Sudarshan, 2003; 2004). In the present study 3.14% of cases of rabies have vaccine failure, may be due to defect in preservation or potency or inadequate dose taken by the patient or non use of RIG. 1 case had developed rabies after 17 yrs of dog bite exposure, cause is not known.

## Conclusion

More than one third of victims are children less than 15 years. 18.12% animal bite victim do not practice any wound toilet measures. 88% of patients did not take vaccinations. Awareness, motivation, school level education about immunization is utmost need for the peoples of the state, The mentioned data does not reflect the true position of rabies cases in the state like Tripura due to low literacy, inconvenience, ignorance, transport problems, non reporting etc. Therefore Continued education programme is necessary in Block, Panchayat Level about rabies to make them aware.

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