

PROFILE OF HYDROPHOBIA CASES ADMITTED TO INFECTIOUS DISEASES HOSPITAL, CSM MEDICAL UNIVERSITY, LUCKNOW

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ABSTRACT:

Objective: To study the epidemiological characteristics of hydrophobia cases admitted to IDH.

Study Design: Descriptive Cross Sectional.

Study Period: May 2005 to June 2008.

Study Setting: Infectious Diseases Hospital (I.D.H), CSM Medical University, Lucknow.

Material and Methods: Secondary data pertaining to 234 hydrophobic cases admitted to IDH, over a period of 3 years was collected from case sheets of patients on a predesigned schedule and was analysed using SPSS 13 software. Case sheets with incomplete data were excluded from the study.

Study Subject: Hydrophobia cases admitted to IDH.

Study Variables: Age, sex, habitation (rural/urban) and vaccination status of patient. Type of animal bite, category of exposure, site of bite and monthly trends in incidence of animal bite.

Statistical analysis: Percentage and Proportions

Results: Out of the total 234 cases admitted to I.D.H, 81.6% were males and 18.4% were females. Majority 94.5% of the cases were of Dog bite and a few were of other animals like Jackal, Mongoose, Fox etc. Amongst the admitted cases, 84.6% and 15.4% belonged to rural and urban areas respectively. Maximum, 31.2% cases were in the age group of 20-44 years. Category III exposure was seen in 67.5% of cases. Lower limb was the most common site of bite 32.4%. No case had complete post exposure vaccination. 85% of cases did not receive any post exposure vaccine (91.4% in rural and 50% in urban areas). Incomplete vaccination was found in about 15% of the total cases. No case was reported to be as a consequence of accompanying or handling a hydrophobia case.

Introduction:

Rabies is one of the oldest recognized disease affecting humans. It is a viral zoonosis, of which a number of carnivores and bat serve as natural reservoirs. About 99% of human deaths, due to rabies globally are a consequence of bite by rabid dogs¹. Human infection usually occurs following a transdermal bite or scratch by an infected animal. Transmission may also occur when infectious material, usually saliva comes in direct contact with the victim's mucosa or fresh skin lesions. Very rarely, rabies may occur through inhalation of virus containing aerosol or via infected organ transplant. Although all age groups are susceptible, children aged below 15 years are at particular risk, predominantly males.

In humans rabies is almost invariably fatal once clinical signs occur. Rabies poses a potential threat to more than 3.3 billion people residing in more than 100 countries where it is enzootic, primarily in Asia and Africa². In India alone, 20,000 deaths are estimated to occur annually, i.e. 2 per 1,00,000 population; in Africa the corresponding figures are estimated

at 24,000 or 4 per 1,00,000 population. Approximately 55,000 people are reported to die from rabies each year (90% confidence interval: 24,500-90,800). However, deaths are likely to be grossly underreported in enzootic countries, particularly in young age groups. It is estimated that rabies is responsible for 1.74 (90% CI: 0.25-4.57) million DALY lost each year globally³. The annual global expenditure for rabies prevention is, by conservative estimates, >US\$ 1 billion.

The present study was carried out to know the epidemiological characteristics of hydrophobia cases admitted to IDH.

Materials and methods:

In the present study, secondary data pertaining to a total number of 234 hydrophobia cases admitted to IDH, over a period of 3 years from the time of its inception in May 2005 to June 2008 was collected from case sheets of patients on a predesigned schedule and was analysed in terms of tools like percentage and proportions using SPSS 13 software. Case sheets with incomplete data were excluded from the study.

Results :

Table 1
TYPE OF ANIMAL BITE AND PLACE OF RESIDENCE

Type of animal	Place of residence				Total	
	Rural		Urban			
	No.	%	No.	%	No.	%
Dog	186	79.5	35	15	221	94.5
Jackal	10	4.3	0	0.0	10	4.3
Others	2	0.8	1	0.4	3	1.2
Total	198	84.6	36	15.4	234	100.0

Table-1 shows that majority (84.6%) of the cases belonged to rural areas. Dog bite 94.5% (79.5% in rural and 15% in urban) was the most common animal bite reported. Jackal bite was reported in 4.3% cases, all among rural habitants. A very few i.e. 1.2% of the cases were of bite by other animals like fox, mongoose and cow. No case was reported to be a consequence of handling or accompanying a rabies patient.

Table 2
MONTHLY TREND IN INCIDENCE OF ANIMAL BITE CASES

Month	Type of animal bite						Total	
	Dog		Jackal		Others			
	No.	%	No.	%	No.	%	No.	%
January	24	10.9	0	0.0	1	33.3	25	10.7
February	9	4.1	1	10	0	0.0	10	4.3
March	9	4.1	1	10	1	33.3	11	4.7
April	25	11.3	1	10	0	0.0	26	11.1
May	23	10.4	0	0.0	0	0.0	23	9.8
June	27	12.2	0	0.0	0	0.0	27	11.5
July	9	4.1	0	0.0	0	0.0	9	3.8
August	9	4.1	2	20	0	0.0	11	4.7
September	10	4.5	0	0.0	0	0.0	10	4.3
October	11	5	1	10	0	0.0	12	5.1
November	36	16.3	2	20	0	0.0	38	16.2
December	29	13.1	2	20	1	33.3	32	13.7
Total	221	100	10	100	3	100	234	100

Table-2 shows that maximum incidence of animal bite cases was in the winter months of November, December, January (38+32+25=95 i.e. 40.6 %) and in the summer months of April, May and June (26+23+27=76 i.e. 32.5%). Incidence of jackal bite was also more common (5 out of 8 total cases) in the winter months of November, December and January.

Table 3
AGE AND SEX OF CASES

Age in Years	Males (n=191)		Female (n=43)		Total (n=234)	
	No.	%	No.	%	No.	%
<5	14	6.0	7	3.0	21	9.0
5-9	31	13.2	14	6.0	45	19.2
10-14	27	11.5	2	0.9	29	12.4
15-19	10	4.3	3	1.3	13	5.6
20-44	62	26.5	11	4.7	73	31.2
>44	47	20.1	6	2.6	53	22.6
Total	191	81.6	43	18.4	234	100.0

Table-3 shows that out of the total 234 cases admitted, majority 81.6 % were males, whereas 18.4 % were females. Maximum number of cases, 31.2 % were in the economically productive age group of 20 to 44 years. Children in the age group <5 year, 5-9 year and 10-14 year had 9%, 19.2% and 12.4% of cases respectively, and added together the age group 0-14 year accounted for a substantial 40 % of the cases.

Table-4
SITE OF ANIMAL BITE IN DIFFERENT AGE GROUP

Age in Years	Site of bit									
	Lower limb		Upper limb		Trunk		Head/Face		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
<5	2	0.9	2	0.9	5	2.1	12	5.1	21	9.0
5-9	9	3.8	8	3.4	15	6.4	13	5.6	45	19.2
10-14	5	2.1	7	3.0	8	3.4	9	3.8	29	12.4
15-19	6	2.6	4	1.7	2	0.9	1	0.4	13	5.6
20-44	31	13.2	26	11.1	8	3.4	8	3.4	73	31.2
>45	23	9.8	20	8.5	5	2.1	5	2.1	53	22.6
Total	76	32.4	67	28.6	43	18.3	48	20.4	234	100.0

Table-4 shows that overall lower limb was the most common site exposed to animal bite 32.4 % followed by upper limb 28.6%. In the younger age group of, <5 years and 5-9 year the most common site was head/face 5.1% and trunk 6.4% respectively.

Table-5
CATEGORY OF ANIMAL BITE IN DIFFERENT AGE GROUPS

Age in Years	Category							
	I		II		III		Total	
	No.	%	No.	%	No.	%	No.	%
<5	0	0.0	3	1.3	18	0.9	21	9.0
5-9	0	0.0	12	5.1	33	3.4	45	19.2
10-14	0	0.0	8	3.4	21	3.0	29	12.4
15-19	0	0.0	4	1.7	9	1.7	13	5.5
20-44	0	0.0	28	12	45	11.1	73	31.2
>45	0	0.0	21	9	32	8.5	53	22.6
Total	0	0.0	76	32.5	158	67.5	234	100.0

Table-5 shows that majority of cases 67.5 % had category III exposure (As per WHO categorisation). Category II exposure was found in 32.5 % cases, whereas no case had category I exposure. In all age groups category III exposure was higher. Both category II and III exposure were highest in the age group 20-44 years i.e. 12 % and 19.2% respectively.

Table 6
IMMUNISATION STATUS AND PLACE OF RESIDENCE

Vaccination Status	Rural		Urban		Total	
	No.	%	No.	%	No.	%
Complete	0	0.0	0	0.0	0	0.0
Incomplete (1 ARV)	10	5.1	10	27.8	20	8.5
Incomplete (2 ARV)	7	3.5	8	22.2	15	6.4
No vaccination	181	91.4	18	50	199	85
Total	198	100	36	100	234	100

Table-6 shows that none of the case had complete post exposure vaccination. Maximum 85 % of cases had not received any post exposure vaccine (91.4 % in rural and 50 % in urban area). Incomplete vaccination was found in about 15 % of the total cases with majority of them 8.5 % having received only one ARV.

Discussion :

Animal bites (mainly dog bites) are a common occurrence in many developing countries across the globe. In the present study majority of cases 94.5 % presented with history of dog bite. Some cases of Jackal bite were reported in districts with forest cover. TR Behera et al⁴ in their study in Berhampur, Orissa had reported that among animal bite cases attending Anti Rabies Clinic, 84.5% were victims of dog bite. Renu bedi et al⁵ also reported that 90.7% of animal bite were due to dogs. Although animal bite cases were reported throughout the year, a seasonal variation was observed with a high number of cases being reported in winter i.e. November, December and January and summer i.e. April, May and June. The higher incidence in winter (following breeding season) is related to the fact that animals lactate their babies and may attack due to fear of harm to its newborn, whereas higher incidence in summer is related to crop reaping and other pre monsoon repair works increasing degree of human animal contact. This finding are in accordance with that of TR Behera et al⁴ in Berhampur, Orissa. A higher incidence in winter was also reported by Jairaj Singh Hanspal et al⁶. Agarwal et al⁷ reported higher percentage of cases in summer.

The present study had 84.6% and 15.4% cases, from rural and urban areas respectively. TR Behera et al⁴ also reported that majority of cases, 59.8% belonged to rural area. The present study also revealed that incidence of animal bite was higher in males among both rural and urban habitants. This finding was very similar to that of TR Behera et al⁴, Jairaj Singh et al⁶ and Sudarshan et al⁸. In the present study, most of the cases 31.2% were in the age group 20-44 years, whereas when combined together children <15 years of age constituted 40.6% of the cases. This finding corroborates with that of TR Behera et al⁴ in which maximum 46.5% cases were in the age group 15-45 year, whereas 38.9% cases were children <15 year. Other studies by Renu Bedi et al⁵ and Jairaj et al⁶ found more than half of the animal bite cases were in children <10 years of age.

Similar to findings of previous studies, in the present study also category III exposure accounted for 67.5% of the cases. Most common site of bite in the present study was the lower limb i.e. 32.4% followed by upper limb 28.6%. Incidence of bite on head/face and trunk was higher in children below 9 years of age. Studies by TR Behera et al⁴, Shetty et al⁹, Agarwal et al⁷, Sampath et al¹⁰, Renu Bedi et al⁵ and Jairaj Singh Hanspal et al⁶ also reported lower extremity as the most common site of bite.

The present revealed that no case had complete post exposure antirabies vaccination. Only about 15% cases had incomplete vaccination, whereas 85% had no prior antirabies vaccination. TR Behera et al⁴ reported only about 1.2 % cases attending Anti Rabies Clinic to have received antirabies vaccination.

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