Factors Influencing Animal Bite Cases and Practices among the Cases attending the Anti Rabies Clinic DMCH, Darbhanga (Bihar)

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Research Article

Abstract: **Introduction:** Rabies is an enzootic and epizootic disease caused by a RNA virus (Genus: *Lyssavirus*, Family: Rhabdoviridae), is of worldwide importance, and is a practically 100 percent fatal disease even today, if not treated appropriately and in a timely fashion but easily preventable. There are many myths and false beliefs associated with animal bite and its management. This study is undertaken to highlight the factors influencing animal bite cases and practices regarding animal bites. ***Objective:*** 1. To determine the factors influencing the Animal Bite cases attending ARC, DMCH Darbhanga, Bihar. 2. To find out the practices related to animal bites among the cases attending ARC, DMCH Darbhanga, Bihar. **Material and Methods**: **Study design:** This is a hospital based descriptive cross sectional study conducted among 822 animal bite victims attended Anti Rabies Clinic, DMC Darbhanga. **Duration:** The duration of the study was 6 months, from May 2012 to November 2012 including data collection, data analysis and report writing. **Study Population:** The patients attending Anti Rabies Clinic DMCH, Darbhanga (Bihar) during the specified period. **Tools:** Semi structured proforma. **Data Collection:** The data collection was done through in-depth interviews with the animal bite victims attending OPD. **Results:** Animal bite cases attending ARC, Darbhanga are mostly male, Hindu, rural people those provoked the animal and they belonged to category III. Among all 9 cases were admitted with frank symptom of Hydrophobia. **Conclusion:** Wound toileting after a bite was lacking in most of the subjects. Many myths and false beliefs associated with animal bites and its management were present.

Keywords: Animal bite, rabies, factors, practices.

Introduction

Rabies is an enzootic and epizootic disease caused by a RNA virus (Genus: *Lyssavirus*, Family: Rhabdoviridae), is of worldwide importance, and is a practically 100 percent fatal disease even today, if not treated appropriately and in a timely fashion but easily preventable [1]. In India, rabies is a zoonotic problem of considerable magnitude. According to WHO-APCRI National Multicentric RabiesSurvey (2004), there are an estimated 17.4 million animal bite cases and 20,000 deaths due to human rabies annually in India. This corresponds to about 36% of the total (55,000) global deaths due to human rabies[2] In India rabies is reported throughout the year from all states except Lakshadweep and the Andaman &Nicobar Islands[3] Due to various political and economic reasons, cultural variations, religious and social practices, myths associated with rabies, and lack of accurate data, the disease has not been brought under control.[4,5] There are many myths and false beliefs associated with animal bite and its management. These include application of Turmeric paste, kerosene oil, herbs, and red chillies on the wounds inflicted by the animal. More faith in indigenous medicines that are of unproven efficacy and not washing the wound properly exists because of lack of knowledge and attitude. This study is undertaken to highlight the factors influencing animal bite cases, and practices regarding animal bites. Probably such type of study is not done at Darbhanga.

Objective

1. To determine the factors influencing the Animal Bite cases attending ARC, DMCH Darbhanga, Bihar.
2. To find out the practices related to animal bites among the cases attending ARC, DMCH Darbhanga, Bihar.

Material and Methods

Study Setting: Anti Rabies Clinic,Darbhanga Medical College, Laheriasarai, Darbhanga is situated in the heart of the town .It caters the medical needs of almost whole Darbhanga district. The OPD is fully functional under department of community medicine.

Study design: This is a hospital based descriptive cross sectional study conducted among 822 animal bite victims attended Anti Rabies Clinic, DMC Darbhanga.

Duration: The duration of the study was 6 months, from May 2012 to November 2012 including data collection, data analysis and report writing .

Study Population: The patients attending Anti Rabies Clinic DMCH, Darbhanga (Bihar) during the specified period.

Tools: Semi structured proforma.

Inclusion Criteria: (1.) Who are at least exposed to or contact with those animals that may cause Rabies. (2.) Attending Anti Rabies Clinic, DMC Darbhanga (3.) Who are willing to participate in the study/ responded correctly.

Exclusion Criteria: (1.) Who are exposed to or contact with those animals that are not Rabid (2.) Attending other than Anti Rabies Clinic, DMC Darbhanga (3.) Who are not willing to participate in the study/ responded correctly.

Data Collection: The data collection was done through in-depth interviews with the animal bite victims attending OPD. Before starting the data collection, permission from the ethical committee was obtained. Questionnaire included information regarding age, sex, address, religion, site of bite, delay in attending OPD, provocation history etc. Local examinations were done. Every day in the evening data collected was recorded in the computer. The patient having the symptoms of Hydrophobia was admitted in IDH, DMC Darbhanga and was followed up with symptomatic management.

Consent: Before collection of the data consent was taken from the study subjects after explaining the importance of the study in detail.

Data analysis: Statistical analysis was done using Microsoft excel & Med calc 8.12.

Results

The baseline characteristics of the study subjects attending ARC, Darbhanga are shown in Table-1.The study included 786 cases and most of them were male i.e. 67.17 % and Hindu 79.38%. Out of total 786 cases of animal bite 37.40% (294/786) were in the age group of 6- 15 years. Mean age $\pm$ SD of the animal bite victims were 23.19 $\pm$ 17.569 years. 67.17 % were from rural area. The cases were mostly of pet dog those provoked the animal .Most of the attending cases belonged to category III wound (WHO Category). Bites involved the lower limb of the victims were 57.5% (452/786) followed by upper limb in 23.28% (183/786).

Table 1: The *baseline characteristics of the animal bite victims.*

Sr. No	Factors			No of cases (n=)		Percentage	
1	Age (Years) Mean 23.187029 Variance 308.68835 SD $\pm$ 17.5695277	0-5	0-15	60	354	7.63	45.03
		6-15		294		37.40	
		16-30		186		23.67	
		31-45		126		16.03	
		46-60		96		12.21	
		60-70		24		3.05	
2	Sex	Male		528		67.17	
		Female		258		32.82	
3	Religion	Hindu		624		79.38	
		Muslim		143		18.19	
		Others		19		2.41	
4	Locality	Rural		528		67.17	
		Urban		258		32.82	
5	Animal	Dog 564(71.75)		Pet	360	45.80	
				Stray	204	25.95	
		Jackal		42		5.34	
		Monkey		108		13.74	
		Cat		42		5.34	
		Boar		12		1.52	
		Mongoose		6		0.76	
		Others		16*		2.03	
6	Site of bite	Head/neck/face		85		10.81	
		Chest/abdomen		39		4.96	
		Upper limb		183		23.28	
		Lower limb		452		57.50	
		Back		27		3.43	
7	category	I		36		4.58	
		II		198		25.19	
		III		552		70.22	
8	Provocation	Provoked		603		76.71	
		Unprovoked		183		23.28	

Age wise frequency distribution of practices that we observed in this study is given in Table 2. Wound Toileting, Wound covering /stitching, Turmeric application in wound , Kerosene application in wound , Chilli Application, Grass/herbs application, Superstition/Traditional healer practices were varying with age. The mean age $\pm$

SD lied in age range between 15.94 ±14.73 (Superstition/Traditional healer) to 25.83±15.46 (Wound covered/stitched).

Table 2: Age wise frequency distribution of practices adopted by Animal bite victims.

Practiced	Age range (Years)							
	0-5	6 -15	16-30	31 -45	46 -60	60-70	Total	Mean Variance ±SD
Wound Toilet	17	43	45	31	18	5	159	24.575 290.032 17.030
Wound covered/stitched	2	7	6	9	3	0	27	25.833 238.889 15.456
Turmeric application	38	95	87	60	35	13	328	24.146 305.979 17.492
Kerosene application	27	53	52	43	21	2	198	23.333 254.987 15.968
Chilli Application	1	2	6	3	1	0	13	24.808 167.751 12.952
Grass/herbs application	9	11	6	4	2	0	32	16.875 193.359 13.905
Superstition/Traditional healer.	20	24	10	5	4	1	64	15.937 217.089 14.734

Sex, Religion & locality wise frequency distribution of practices are given in Table 3. Turmeric application in wound were noted most widely adopted practices i.e. 41.73% (328/786) , whereas chilli Application were least practiced overall i.e.1.65% (13/786).

Table 3: Sex, Religion, & Location wise frequency distribution of practices adopted by Animal bite victims.

Practiced	Sex			Religion				Locality		
	M	F	T	H	Mu	O	T	R	U	T
Wound Toilet	116	43	159	124	31	4	159	91	68	159
Wound covered/stitched	20	7	27	22	5	0	27	21	6	27
Turmeric application	215	113	328	257	68	3	328	255	73	328
Kerosene application	122	76	198	138	59	1	198	152	46	198
Chilly application	2	11	13	10	3	0	13	11	2	13
Grass/herbs application	17	15	32	22	10	0	32	25	7	32
Traditional Healer	21	43	64	47	17		64	46	18	64

(M=Male, F=Female, T=Total, H=Hindu, Mu=Muslim, O=Others, R=Rural, U=Urban)

Most of the animal bite victims attended the clinic within 3 days of the exposure/bite. Table -4 shows the details of awareness to attend the clinic. Only 14% (110/786) cases had attended the anti rabies clinic within 24 hours of bite and 7.88% (62/786) attended after 30 days.

Table 4: Frequency of animal bite victims attended clinic after bite.

Clinic attended Within(days)	Sex			Religion				Locality		
	M	F	T	H	M	O	T	R	U	T
1	83	27	110	93	12	5	110	71	39	110
3	332	129	461	356	101	4	461	307	154	461
7	63	41	104	82	18	4	104	60	44	104
15	17	9	26	18	6	2	26	19	7	26
30	12	11	23	18	4	1	23	16	7	23
>30	21	41	62	57	2	3	62	55	7	62
Total	**528**	**258**	**786**	**624**	**143**	**19**	**786**	**528**	**258**	**786**

(M=Male, F=Female, T=Total, H=Hindu, Mu=Muslim, O=Others, R=Rural, U=Urban)

Discussion

In this study, children in the age group of 6- 15 years were affected more. Most probably because they are highly kinetic and they do not take proper precaution. The main biting animal was dog and this observation is seen uniformly in other studies too.[6] Category III was present in 70% of bite victims. This finding is similar to that of study carried out by Venu Shah1 et al.[6] Provoked bites were found in 76.7 % cases and most of the bite were from the pet dog i.e.45.8%. Majority of cases (67.1 %) were from the rural area. This may be due to lack of education in this region. Indigenous practices like turmeric application and kerosene application were also prevalent.

Conclusion

The present study concludes that the dogs were the main biting animal and mainly pet dogs. The cases were mostly coming from rural area, affecting mostly the children. Lower limb was most common site and Cat- III exposure was most common. The bite victims did not do proper wound care and many indigenous practices like turmeric and kerosene application in the wound was quite prevalent in this region. To combat this ignorance BCC and IEC activities should be conducted .The motivational and Social intervention model of education should be implemented for better outcome. There must be multisectoral co-ordination and involvement of NGOs.

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