



Epidemiological profile of animal bite victims attending an anti- rabies clinic in district Srinagar, Kashmir

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Abstract

Background: Rabies is a highly fatal disease caused by Lyssavirus type 1 belonging to the Rhabdoviridae family. It's a disease of warm blooded animals. It's transmitted to humans and other animals through the saliva of infected animals. Controlling the animal bites is of public health importance as they are responsible for huge loss of lives worldwide and in India also.

Objective: The objectives of this study were to study the epidemiological characteristics of animal bite cases and to find out the practices after animal bite in patients attending the anti-rabies clinic of SMHS hospital Government Medical College, Srinagar.

Methodology: The study was carried out for a period of one month from 9th June 2017 till 8th July 2017. Information was obtained by conducting a semi-structured interview of the participants after obtaining informed consent from the animal bite victims.

Results: Of 145 patients that were interviewed, 76% were male, 22% were up to 10 years of age and 80% were from urban areas. In about 46% of cases the timing of bite was between 10:00 a.m. to 4:00 p.m. 78% were category III bites and in 63.4% cases lower limb was the site of bite and dogs were responsible for 81 % of the bites. 47% victims did not wash the wound before reaching the anti-rabies clinic.

Conclusion: Rabies is a fatal disease and dog bites are mostly responsible for this disease. Most often small children are involved. Parents should take care of their children and should make sure that they play in safe areas. A lot of people are still unaware about the importance of wound care and do not pay attention to it. There's a need to create awareness amongst the people regarding wound care.

Introduction

Rabies is a highly fatal disease caused by Lyssavirus type 1 belonging to the Rhabdoviridae family. It's a disease of warm blooded animals.

It's transmitted to humans and other animals through the saliva of infected animals and rarely via organ transplantation.⁽¹⁾ The disease though fatal, is preventable through timely pre-and post-

exposure vaccination. However, once the disease occurs, death is inevitable since no treatment is available. About 98% of animal bites in India are caused by dogs and cats.⁽²⁾ Controlling the animal bites is of public health importance as they are responsible for huge loss of lives worldwide and in India also. Globally 59,000 deaths occur due to canine rabies and India accounts for more than 35% of the global burden of rabies (20,800 deaths).⁽³⁾

Kashmir valley had 26923 dog bite cases in 2017 out of which 9514 cases were from Srinagar alone according to a newspaper report.⁽⁴⁾ Anti-rabies vaccine is being provided free of cost at anti-rabies clinic of SMHS hospital Srinagar which bears the maximum load of animal bite cases.

Objectives: The objective of this study was to study the epidemiological characteristics of animal bite cases and to know practices after animal bite in patient attending the anti-rabies clinic of SMHS hospital Government Medical College, Srinagar, so that we come to know the kind of awareness that is required to be brought

about in the people to help them take appropriate preventive measures. This will ultimately help to reduce the disease burden.

Methodology

This cross-sectional hospital based study was conducted at the anti-rabies clinic run by the department of social and preventive medicine. The study was carried out for a period of one month from 9th June 2017 till 8th July 2017. We conducted the interview of 145 patients in the one month period. Information was obtained by conducting a semi-structured interview of the participants. Informed consent was taken from all the participants. Data was summarized by calculating percentages using SPSS Statistics version 23.

Results

A total of 551 animal bite victims were recorded in the one month period. Semi-structured interview of 145 victims was conducted.

Table 1 ^{*(5)}

SOCIO DEMOGRAPHIC PROFILE		NUMBER (%)
Sex	Male	110(76%)
	Female	35(24%)
Age in years	<= 10	32(22%)
	11 to 20	21(14.5%)
	21 to 30	23(16%)
	31 to 40	29(20%)
	41 to 50	18(12.4%)
	51 to 60	12(8.3%)
	>= 61	10(7%)
Region	Rural	29(20%)
	Urban	116(80.0%)
Socio economic status*	Upper	4(3%)
	Upper middle	32(22%)
	Lower middle	35(24%)
	Upper lower	64(44%)
	Lower	10(7%)

76% of the victims were male while 24% were females (table 1).Maximum number of cases i.e.,22% were recorded in the age group below 10 years of age while 20% were from 31 to 40 years of age.

80% were from urban areas and 20 % belonged to rural area. Out of the total, 70% belonged to Srinagar district.

44% of the cases were from the upper lower class whereas 7% were from the lower class i.e., 51% of the total victims belonged to lower class.

Table 2

CHARACTERISTICS OF BITE		NUMBER (%)
Category of bite*	III	113(78%)
	II	32(22%)
Site of bite	Head, neck and face	9(6.2%)
	Trunk	2(1.4%)
	Upper limb	35(24%)
	Lower limb	92(63.4%)
	"multiple bites on different areas"	7(4.8%)
Biting animal:	Dog	118(81.4%)
	Cat	12(8.3%)
	Horse	2(1.4%)
	Eagle	1(0.7%)
	Monkey	1(0.7%)
	Cow**	11(7.6%)
Time of the bite	Morning (6:00 a.m to 10:00 a.m)	33(22.8%)
	Day (10:00 a.m to 4:00 p.m)	66(45.5%)
	Evening (4:01 p.m to 8:00 p.m)	30(20.7%)
	Night (8:01 p.m to 6 a.m)	16(11%)
Provocation	Provoked bite	30(20.7%)
	Unprovoked bite	115(79.3%)
Place of vaccination after bite	SMHS hospital	120(82.8%)
	Peripheral hospitals	21(14.5%)
	Other clinics/hospitals in Srinagar	4(2.75%)

*No category I case was recorded in our one month study.

**victims who had history of contact with rabid cow e.g. contact with saliva of rabid cow while feeding while the skin of hands was abraded at places

78% of the victims had category III bite while 22% of the bites were category II (table 2). No category I case was recorded in our study.

63% of the victims had the wounds on their lower limb followed by upper limb constituting 24% of the wounds.

In our study, in about 46% of cases the timing of bite was between 10:00 a.m. to 4:00 p.m. while there were equivalent number of cases in the morning and evening.

In 81% of the cases dog was the biting animal followed by 8% cat bites. 79% of the bites were unprovoked while 21% had history of provocation.

83% of the victims were vaccinated at anti-rabies clinic of SMHS hospital while the remaining were vaccinated at the peripheral hospitals in other districts or other clinics and hospitals in Srinagar.

Table 3

Time taken to reach the ARC in hours	Number(%)
≤12	104(71.7%)
13 to 24	19(13.1%)
25 to 48	14(9.7%)
49 to 240 (3rd to 10th day)	8(5.5%)
Reasons for delay	Number(% out of 145)
Busy	14(9.7%)
Didn't consider it important	7(4.8%)
Child didn't tell his parents	4(2.8%)
Patient was admitted	1(0.7%)
It was late: vehicle NA	13(9%)
Didn't know RIG is important	3(2%)
Traffic jam	4(2.8%)
Went to another hospital first where vaccine was not available	1(0.7%)
Didn't know anything about treatment	3(2%)
Strike	1(0.7%)
Afraid of injections	1(0.7%)
Wound didn't cause pain	1(0.7%)
Total delays	53/145(36.6%)

Those cases who didn't reach the ARC in time as was expected of them were asked for the reasons for delay. These included about 37% of the cases (table 3). About 63% of the patients made no delay to reach the ARC. There were varied responses regarding the reasons for delay. Maximum number of people 9.7% said they were

busy. 9% of people said it was late and vehicle was not available. About 5% of people said they didn't consider it important. In 2.8% of cases, child didn't tell his parents about the bite.

In our study, out of all cases only 7 people (4.8%) had been previously exposed to animal bite.

Practices after the bite	Number(%)
Washed with water only	12(8%)
Washed with water and soap for a few minutes	51(35%)
Washed with water and soap for at least 15 minutes	6(4%)
Applied antiseptic	3(2%)
Applied mirchi	3(2%)
Consulted faith-healer/ magician	1(1%)
Did nothing	69(48%)
Total	145(100%)

Maximum number of victims i.e., 47 % of the victims reached the anti-rabies clinic without having washed the wound, 35% washed it with soap and water for a short duration of time. 8% had washed the wound with water only and only 4% had washed the wound thoroughly with soap and water for at least 15 minutes as recommended. 2% had applied antiseptics directly to the wound without first washing it. Wrong practices like applying mirchi were practiced by small number of victims i.e., only 2% and about 1% of the victims had consulted a faith-healer.

Discussion

Rabies is a fatal disease and prevention is the only way it can be curbed. In our study, we found that men were attacked more often than women and it's likely due to the men working outdoors more often than women in our set up. Other studies in India have also come up with similar results with men being more commonly involved.⁽⁶⁾

Small children less than 10 years of age are mostly affected (22%) as shown in a previous study in Kashmir as well ⁽⁷⁾. Children may be the victims of attack while playing outside their homes, going to or returning from schools and sometimes they provoke dogs and in turn get attacked.

Maximum number of cases were from urban areas and most of them from district Srinagar (70%). Similar results have also been shown in other

studies.⁽⁸⁾ This can be related to the increasing dog population in urban areas and partly because of the location of the SMHS hospital which is located in Srinagar, the summer capital of Jammu and Kashmir and thus receives major brunt from the urban areas. People from rural areas are also provided vaccination and wound care at peripheral hospitals and thus lesser number of people from rural areas approach the SMHS hospital. Unfortunately, rabies immunoglobulin is available only at a few peripheral areas.

In our study more than half of the victims were from lower socio-economic class. This is of concern as the immunoglobulin required for the post-exposure prophylaxis is too expensive for the poor people to afford and it was seen in some cases that such people had either borrowed money for that or had had to sell some home appliances to be able to afford. Government should take some steps to make rabies immunoglobulin available at hospitals free of cost at least for below poverty line victims.

Maximum number of cases were observed during day time from 10 a.m. to 4 p.m. possibly because during day time most people are outdoors.

In our study, 78% of the cases were category III which implies that most bites are severe and require immunoglobulin. Our results are in concordance with a previous study conducted in Kashmir.⁽⁷⁾

In our study, maximum number of cases had been attacked on lower limbs (63%) which is in accordance with previous studies.⁽⁹⁾

Since dog population is increasing in our valley, dogs are mostly responsible for the bites being about 81% in our study followed by cat bites(8%). In our study, 21% of the bites were provoked. Mostly provoked bites are recorded in children. But we cannot fully establish which bites are provoked as sometimes something may be a provocation for an animal while the person who was attacked has no idea of it.

72% of the cases reached the anti-rabies clinic within 12 hours which shows that there is a fear of dog bites among people. Among those who

reached late, on being enquired most of them gave the reason that they were busy which implies they didn't consider dog bite that serious a condition and came to receive the vaccination only when they were free from their work. For some others it was too early in the morning or too late in the evening to reach the hospital - owing to the lack of vehicular transport at such hours in the valley. Mostly category II bites are not considered serious by the people and awareness regarding this needs to be created amongst the public. Many people also don't know about the importance of rabies immunoglobulin.

47 % of the victims reached the anti-rabies clinic without having even washed the wound. Washing the wound immediately with soap and water thoroughly for at least 15 minutes is of great importance.⁽¹⁾ This practice can decrease the viral load at the wound site. This practice was employed by only 4% of the victims. This reflects the fact that there is lack of awareness among people regarding the importance of local wound care. So, there's a need to create awareness among people regarding importance of wound care.

Conclusion

Rabies is a fatal disease and dog bites are mostly responsible for this disease. Most often small children are involved. Parents should take care of their children and should make sure that they play in safe areas. A lot of people are still unaware about the importance of wound care and do not pay attention to it. There are many steps which need to be taken for controlling rabies which include controlling the dog population, vaccinating the pets, stopping the indiscriminate throwing of waste on roads and use of public dustbins with lids, and creating awareness among the people regarding the importance of immediate and thorough wound washing even after the slightest exposure. People must be made aware regarding the importance of rabies immunoglobulin when required in addition to vaccination.

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