Research Article

Rabies menace and control - Knowledge, awareness, and practices among patients in a tertiary care hospital in West Bengal

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ABSTRACT

Background: India accounts for approximately one-third of all human rabies cases in the world, with an estimate of more than 20,000 human rabies fatalities reported annually. Administration of appropriate prophylactic method prevents deaths due to rabies. In prevention and control of rabies, knowledge and awareness in the community are very essential and crucial. **Objectives:** The objectives of the study were to assess the awareness regarding animal bite and to determine the practices regarding animal bite in patients attending a rabies clinic in a tertiary care hospital of West Bengal. **Materials and Methods:** The study was a cross-sectional, hospital-based study conducted in the rabies clinic of Murshidabad Medical College and Hospital. The duration of the study was from April to May 2016. As the study was undertaken in an outpatient clinic, consecutive sampling method was followed. During the above-said study period, a total of 200 sample size was achieved. Data were analyzed with SPSS IBM software version 21.0. Means and proportions were calculated. **Results**: Though 80.5% of the respondents heard the term rabies and 73% knows about the fatal nature of rabies, less than half (48%) were aware about the signs and symptoms of rabies. Majority (73%) washed the area with soap and water. Nearly 91% of the population were given antirabies vaccination but only 4.5% were administered rabies immunoglobulin. Almost half (45.5%) of the population started specific treatment after 24 h after bite. **Conclusion:** As majority of the victims were schoolgoing children, sensitization of the students with correct knowledge and practices has to be entertained. In addition, stringent guidelines have to be followed for treatment of all categories of animal bites.

KEY WORDS: Rabies; Animal Bites; Knowledge; Attitude

INTRODUCTION

Rabies is one of the most serious zoonotic diseases which is nearly 100% fatal if clinical signs develop.[1] India accounts for approximately one-third of all human rabies cases in the world, with an estimate of more than 20,000 human rabies fatalities reported annually. More than 95% among these are from rabid dogs.[2] In a previous study, most children who often play with stray dogs are even unaware of having been bitten and most of the times their parents ignored such attacks or simply provide home-based treatments such as pepper or turmeric. Only a few proportions seek medical advice, usually with delay.[3] Administration of appropriate prophylactic method prevents deaths due to rabies.[4] In prevention and control of rabies, knowledge and awareness in the community are very essential and crucial.[5] The objectives of the study were to assess the awareness regarding animal bite and to determine the practices regarding animal bite in patients attending a rabies clinic in a tertiary care hospital of West Bengal.

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MATERIALS AND METHODS

The study was a cross-sectional, hospital-based study conducted in a rabies clinic of Murshidabad Medical College and Hospital. The duration of the study was from April to May 2016.

Study Population

The study population were patients who attended the rabies clinic of Murshidabad Medical College and Hospital. Patients who visited rabies clinic for the first time and willing to participate in the study were included in the study. Patients who had a previous exposure to animal bites and who had undertaken post-exposure prophylaxis for animal bites were excluded from the study.

Sampling Method and Sample Size

As the study was undertaken in an outpatient (OP) clinic, consecutive sampling method was followed. During the above-said study period, a total of 200 sample size was achieved.

Study Tool

The study tool was a pre-tested and pre-designed questionnaire. The questionnaire included details including sociodemographic profile and questions on awareness and practice toward animal bites including rabies.

Data Collection and Analysis

Data were entered in Microsoft Excel spread sheet and analyzed with SPSS IBM software version 21.0. Means and proportions were calculated.

Ethical Issues

Approval from the Institutional Ethics Committee was obtained before conducting the study. Written informed consent was obtained from all the study participants. Strict confidentiality of the data and privacy of the study participants were maintained at all phases of the study.

RESULTS

Sociodemographic Profile

A total of 200 respondents participated in the study. More than half of the interviewed, i.e., 105 (52.5%) were males. Regarding age group, majority (22.5%) were youth (16-24 years) followed by 35-44 years' age group (18.5%). Most of them were students and homemakers. Majority of the victims were primary school completed. Majority of them belong to class IV followed by class III socioeconomic scale according to B. G. Prasad Scale (Table 1).

Awareness

Though 80.5% of the respondents heard the term rabies and 73% knows about the fatal nature of rabies, less than half (48%) were aware about the signs and symptoms of rabies. Almost 60% were aware that dog is the main reservoir of rabies; majority of them were able to identify rabid animal with correct signs and symptoms. A good number of people (82.5%) were aware that rabies can be prevented by vaccination to human, but awareness regarding preventable nature of rabies by vaccinating the animal was comparatively less (43.5%). Almost 87% of the population knew that bite can be washed with soap and water, but regarding traditional methods, only 29% said yes. Almost half (42%) were

Table 1: Distribution of the study population according to their sociodemographic profile (*n*=200)

Sociodemographic profile	*n* (%)
Gender	
Male	105 (52.5)
Female	95 (47.5)
Age group	
0-5 years	18 (9)
6-15 years	34 (17)
16-24 years	45 (22.5)
25-34 years	31 (15.5)
35-44 years	37 (18.5)
45-60 years	27 (13.5)
>60 years	8 (4)
Education	
Illiterate	30 (15)
Primary	46 (23)
Middle	61 (30.5)
Secondary	16 (8)
Higher secondary	26 (13)
Graduate and above	21 (10.5)
Occupation	
Unskilled worker	22 (11)
Farmer	16 (8)
Business	12 (6)
Clerk	13 (6.5)
Homemaker	53 (26.5)
Retired	2 (1)
Student	70 (35)
Others	12 (6)
Socioeconomic class*	
Class I	22 (11)
Class II	20 (10)
Class III	54 (27)
Class IV	71 (35.5)
Class V	33 (16.5)

*Modified BG Prasad's classification

Table 2: Distribution of the study participants according to awareness regarding rabies disease (n = 200)

Awareness regarding rabies	*n* (%)
Heard the disease "rabies"	
Yes	161 (80.5)
No	39 (19.5)
Knowing the signs and symptoms	
Correct	96 (48)
Not correct	65 (32.5)
Not applicable	39 (19.5)
Knows about the fatal nature of disease	
Yes	146 (73)
No	15 (7.5)
Not applicable	39 (19.5)
Able to identify the rabid dog	
Yes	111 (55.5)
No	89 (49.5)
Main reservoir of rabies*	
Dog	140 (59.3)
Cat	80 (33.9)
Monkey	10 (4.3)
others	06 (2.5)

*Multiple responses

unaware that the biting animal should be followed up until 10 days. Nearly 52.5% of the participants responded that they should report the local health or veterinary authority whereas 47.5% said no. Almost 80% said that stray dog should not be killed after bite, but 91% of the respondents said that they would advise children to be careful to play with stray dogs. About 81% of them had knowledge regarding the necessity of controlling dog population and majority (40%) of them said it is by impounding dog shelter. Source of information was neighbor (42.5%) followed by mass media (25.5%) (Tables 2 and 3).

Nature of Bite

Among the attendants, 66% were unprovoked bite. Majority (59%) were from rural area and outdoor (62.5%). Nearly 71.5% were cat III bite followed by 27% which was cat II bite. Regarding the biting animal, 68% were stray animal, and in 78% of the cases, it was dog (Table 4).

Practices

Majority (73%) washed the area with soap and water. Almost 91% of the population were given antirabies vaccination but only 4.5% were administered rabies immunoglobulin. Almost half (45.5%) started specific treatment after 24 h after bite. The most common cause of delayed reporting to ARV center was ignorance (31.5%) followed by long distance (18%). Nearly 52.5% reported to health authority after bite (Table 5).

Table 3: Distribution of the study participants according to knowledge and attitude toward animal bite treatment (n=200)

Knowledge and attitude toward animal bite treatment	*n* (%)
Knows that dog bite wound should be washed with soap and water	
Yes	174 (87)
No	26 (13)
Knows that rabies could be prevented by vaccination to human	
Yes	165 (82.5)
No	35 (17.5)
Knows that rabies could be prevented by vaccination to dogs	
Yes	87 (43.5)
No	113 (56.5)
Traditional method of dog bite wound treatment can be followed	
Yes	58 (29)
No	142 (71)
Will you report to health/veterinary authorities	
Yes	105 (52.5)
No	95 (47.5)
Stray dog should be killed after biting	
Yes	41 (20.5)
No	159 (79.5)
Rabies-suspected dog should be killed	
Yes	90 (45)
No	110 (55)
Will you advise your child to be careful and not to play with stray dog	
Yes	182 (91)
No	18 (9)
Is it necessary to control dog population in your community	
Yes	162 (81)
No	38 (19)
Source of information	
Health personnel	19 (9.5)
Veterinary officials	1 (0.5)
Friends	40 (20)
Neighbor	85 (42.5)
Media	51 (25.5)
Rabies awareness campaign	3 (1.5)
Others	1 (0.5)
Appropriate methods for controlling dog population	
Sterilization operation	74 (37)
Impounding dog shelter	80 (40)
Killing of dog	46 (23)
Methods of killing of dog	
Poison	18 (9)
Beating	10 (5)
Bullet firing	8 (4)
Others	10 (5)

Table 4: Distribution of the study participants according to the pattern of animal bites (n = 200)

Pattern of animal bites	*n* (%)
Nature of biting	
Provoked	68 (34)
Unprovoked	132 (66)
Geographical area of biting	
Rural (118)	
Indoor	43 (21.5)
Outdoor	75 (37.5)
Urban (82)	
Indoor	32 (16)
Outdoor	50 (25)
Category of bite (n = 200)	
I	3 (1.5)
II	54 (27)
III	143 (71.5)
Types of animal	
Dog	156 (78)
Cat	40 (20)
Monkey	4 (2)
Category of biting animal	
Pet	48 (24)
Stray	136 (68)
Unknown	16 (8)
Vaccination status	
Vaccinated	5 (2.5)
Not vaccinated	126 (63)
Unknown	69 (34.5)

Table 5: Distribution of the study participants according to practices toward animal bites (n=200)

Practices toward animal bites	*n* (%)
Local wound treatment (n=200)	
Nothing	14 (7)
Washed with water only	22 (11)
Soap and water	146 (73)
Antiseptics	18 (9)
Anti-rabies vaccination (n=200)	
Yes	182 (91)
No	18 (9)
Rabies immunoglobulin administration	
Yes	9 (4.5)
No	191 (95.5)
Interval between animal bite and specific treatment (n=200)	
<6 h	39 (19.5)
6-24 h	70 (35)
>24 h	91 (45.5)
Stray dog killed after biting	
Killed	41 (20.5)
Not killed	159 (79.5)
Rabies-suspected dog should be killed	
Killed	90 (45)
Not killed	110 (55)
Advised child to be careful and not to play with stray dog	
Advised	182 (91)
Not advised	18 (9)

DISCUSSION

In the present study, majority (80.5%) of the respondents heard the term rabies and around three fourths knew about the fatal nature of rabies. Most of the respondents (82.5%) were aware that rabies is vaccine preventable. Nearly 87% of the population knew that bite must be washed with soap and water immediately. More than two-third bites were unprovoked bites. Around 90% of the population received antirabies vaccination but only a few were administered rabies immunoglobulin despite 70% of the category III wounds victims.

Forty eight percent of the patients reported for animal bites to the OP department belong to young population (under 24 years of age). This is similar to a previous study finding, which reported 52.8% as under 15 years of age.[6-12] Around 85% of the study participants in the present study were literates. It is similar to a previous study which reported 86.5% literates, and literacy has an influence on the knowledge and practices of animal bite prevention and treatment.[13] In the present study, almost 60% were aware that dog is the main reservoir of rabies. Around 73% knows about the fatal nature of rabies, but less than half (48%) were aware about the signs and symptoms of rabies. However, in a previous study done by Singh and Choudhary, they noted that 98.6% knew that rabies is transmitted by rabid dog bite. This variation may be due to various factors including literacy level.[14] In our study, 82.5% were aware that rabies can be prevented by vaccination to human, but awareness regarding preventable nature of rabies by vaccinating the animal was comparatively less (43.5%). In a previous study by Prakash et al., the authors reported that 55.5% of the participants are aware about the role of vaccine in preventing rabies; however, the findings of Singh and Choudhary (86%) were similar to our study finding.[13,14] About 87% of the population knew that bite can be washed with soap and water and 29% supported traditional methods, and majority (73%) washed the area with soap and water. In a previous study done by Sekhon et al., they found that 31% of the study participants washed their wounds with either soap and water or only with water and 15% followed unconventional practices.[11] In the present study, the most common cause of delayed reporting to ARV center was lack of awareness (31.5%);

this proportion is worrisome as approximately one third of the population is lacking awareness. This issue needs to be addressed with increase in health education among the community.

The present study was well conducted and was able to demonstrate the urgent need for health education for the community on the growing problem of dog bite. Furthermore, the study was able to find that there was a lack of administration of immunoglobulins for most of the category III dog bite victims. As the study was done at the OP department of a health center, it might not represent bites that have not reported to health-care system.

Most of the participants belong to younger age group, especially schoolgoing children, there is a need for health education toward the practices related to dog bite treatment. There were some participants who reported late seeking health care; this also needs to addressed by increasing awareness for early reporting for vaccination.

CONCLUSION

As majority of the victims were schoolgoing children, sensitization of the students with correct knowledge and practices has to be entertained. There is a need for health education to community toward the practices of dog bite treatment. In addition, stringent guidelines have to be followed for the treatment of category III with immunoglobulin as only few with category III bite received immunoglobulin treatment.

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