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Care of animal bite victim in Community and in health care facility in a rural area of West Bengal.

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Abstract:
Background*: Rabies, an almost 100% fatal condition can be prevented by timely management e.g. local wound treatment, application of vaccine and immunoglobulin where indicated.*
Objectives*: To ascertain the profile of animal bite cases , to find the practices of community after animal bite before attending the hospital and also to ascertain treatment of animal bite cases in the rural health care centre.*
Methodology: *Patients or their guardians were interviewed with the help of predesigned and pre tested questionnaire after clinic attendance in a block primary health centre of Burdwan district of West Bengal.*
Results*: Majority were male (74.5%) and 43.7%. were children less than 15 years. Majority (85.8%) were exposed to dog (68.3%- street dog and 31.7% - pet dog).Three fourth (74.3%) had category –III exposure. Site of bite was in lower limb in two third (66.7%) cases. In 47% cases washing of the wound after animal bite was not done. Only one third (33.9%) visited CHC /health facility on the day of bite. In 92.9% cases vaccine was started in 2-6 days. In all patients except one vaccine was given in intradermal route. Among 136 category-III patients only 2.2% were administered Immunoglobulin in spite of being available in the health facility.*
Conclusion: *Local treatment was not adequately practiced. Attendance to Health facility was late Immunoglobulin was not administered in most of the category III exposure. Practice of community member and health care personnel need improvement.*
Key words: *animal bite, local management, rabies, vaccine*

I. Introduction

Rabies, also known as hydrophobia, is an acute infectious diseases of the nervous system caused by an RNA virus belonging to family Rhabdoviridae.[1] It is perhaps the most dreadful of all communicable diseases and carries almost 100% mortality if no preventive measures taken on time.

The Association for Prevention and Control of Rabies in India (APCRI) conducted a national multi-center survey with the help of 21 medical schools during the period February-August 2003. They estimated annual rabies incidence in India to be about 2 per 100000 populations. The islands of Andaman, Nicobar, and Lakshadweep were found to be free of rabies.[2]

In absence of routine rabies vaccination, Post-exposure prophylaxis i.e. treatment of a bite victim that is started immediately after exposure to suspected rabid animal can prevent development of rabies and death. [3] This consists of:

1. Local treatment of the wound, initiated as soon as possible after exposure;
2. A course of potent and effective rabies vaccine that meets WHO standards; and
3. The administration of rabies immunoglobulin, in category III contact.

There are many myths and false beliefs associated with dog bite and wound management. Sudarshan et al [4] reported that a high proportion of bite victims did not wash their wounds with soap and water (39.5%), The recourse to indigenous treatment (45.3%) and local application to wound (36.8%/) was quite prevalent. The use of rabies immunoglobulin was low (2.1%). Late or incomplete treatment after exposure may not prevent development of rabies.

In this background the present study was conducted in a rural area of West Bengal to ascertain the profile of animal bite cases in a rural community health centre of West Bengal, India to find the practices of community after animal bite before attending the hospital and to ascertain treatment of animal bite cases in the rural health care centre.

II. Materials And Methods

Present study was conducted in a Community Health centre of Burdwan District of West Bengal. West Bengal is situated in eastern part of India. Patients coming with animal bite were seen and treated in clinic in that health centre. Data collection was done in that clinic. Period of Study was in 2103. Patient or their guardian

was informed about the study objective and their consent was sought .After their verbal consent the patient or their guardian was interviewed with the help of predesigned and pre tested questionnaire. Vaccine administration was ascertained from treatment record. Data obtained were analyzed with the help of SPSS ver. 17.Frequencies and percentages were calculated.

III. Results

During the study period 183 patients attended the clinic of Community Health Centre (CHC).Among the patients majority were male (74.5%) and 43.7%. were children less than 15 years (Table-1). Among patients above 7 years of age only 15.9% have educational level secondary and above and 7.1% were illiterate. Thirty percent of study population was students.

Table 1: **Distribution of patients according to age**

Age group(in years)	Number	Percentages
0-5	13	7.1
5-15	67	36.6
15-25	41	22.4
25-35	26	14.2
35-45	11	6.0
45-60	21	11.4
≥60	4	2.1
Total	183	100.0

Among the patients majority(85.8%) were exposed to dog,12.6% to cat, 0.5% to monkey and 1.1% to rat. In case of exposure to dog majorities (68.3%) were exposed to street dog and 31.7% were exposed to pet dog.(Table 2)

Among the patients 74.3% had category –III exposure, 25.1% had category –II exposure and only 0.5% had category –I exposure. Site of bite was in lower limb in two third (66.7%) cases, followed by upper limb(20.8%),head & neck(3.8%),trunk(2.2%).In 6.6% cases bite was in more than one site.(Table 3)

Table 2: Distribution of patients according to animal exposure

Animal	Number	Percentages
Stray Dog	99	54.1
Pet dog	58	31.7
Cat	23	12.6
Monkey	1	0.5
Rat	2	1.1
Total	183	100.0

Table-3: Distribution of Patient according to site of bite

Site	Number	Percentages
Lower limb	122	66.7
Upper limb	38	20.8
Body	4	2.2
Head neck	7	3.8
More than one areas	12	6.6

In 51.9% case no action was taken in home after exposure to animal. In only 6% cases any action was taken within one hour. In 47% cases washing of the wound after animal bite were not done and in 15.8% cases washing were done with water alone and in 36.6 % cases washing was done with water and soap. In 0.5% cases disinfectant was used for washing.

In 38.3% cases nothing was applied on the site of exposure. But others have applied different thing on the site of bite-turmeric (3.8%), unspecified ointment (16.9%), Boroline (11.5%), lime-(8.7%), Dettol-(13.7%),Burnol (2.7%).

Among all the patients only one third (33.9%) visited CHC /health facility on the day of bite, 48.6% on second day and rest (17.4%) visited after two days.

In 27.9% patient no help was sought from other agency outside home before coming to CHC. But many patient sought help from different agency before visiting CHC, and some visited more than one agency. Quack was visited by 5.5%, Ojha (Faith healer) was consulted by 10.4% and Medicine shop owner was consulted by 41.5% patients. In 58.5% cases tetanus toxoid was given before coming to CHC.

In 92.9% cases vaccine was administered in 2-6 days. In 2.2% cases it was administered beyond 6 days. In all patients except one vaccine was given in intradermal route.

Among 136 category-III patients only 2.2% were administered Immunoglobulin and rest (97.8%) were not given immunoglobulin in spite of being available in the health facility. About one tenth (9.8%) patients had history of previous vaccination. Only in 3.8% cases animal was observed.

IV. Discussion:

Present study was conducted in a rural block of West Bengal. Majority of the victims are male. About half of the patients are child less than 15 years of age. Children are more exposed because of their playful nature and they often irritate the animals. In the present study majority of the patients were exposed to dog, followed by cat. Sudarshan et al[4] in their country wide study have also similar finding. The main animals responsible for bites were dogs (96.2%), most of which were street dog.

The most common bite sites were the extremities (>86%) in the present study. Sudarshan et al,[4] Shah et al from Ahmedabad,[5] Agarvval & Reddaiah[6] from Delhi have also similar finding. As lower extremity is the most accessible part to the animal, bite in most cases was in the lower limb.

Washing the wound after animal bite is very important to reduce the viral load, but about half of patients (47%) did not practiced washing the wound. In a study from Gujarat[7] only 31.1% persons endorsed application of first aid measures such as washing, antiseptic bandaging & T.T. in case of animal bite. In a multi centric study in India by Sudarshan et al[2] a high proportion of bite victims did not wash their wounds with soap and water (39.5%). In Ahmedabad study[5] only 24.9% of victim had done the wound washing after the bite.

Anti rabies vaccine was available free of cost in the CHC. Attending the Health facility as early as possible is very important for local treatment and anti rabies vaccination. But only one third patients had attended the health facility on day of bite. In another study in Ahmedabad [5] two third of cases had attended the anti rabies clinic within 24 hours of bite. Half of the cases (52.6%) had applied indigenous materials on the wound. Another study by Borker et al[8] in Yeotmal, Maharashtra reported that around 29.46% of cases did nothing as pre-treatment management of wound.A study from Latur,Maharastra[9] have listed many cultural practices after animal bite like application of lime, burning of wound, application of thread etc. In the present study area many person have consulted medicine shop owner and unregistered village doctor. So, they can give proper first aid and advice if training is imparted to them.

In the present study 74.3% had category –III exposure ,but only 2.2% were administered Immunoglobulin. In a study in Maharashtra by Gogtay& Nagpal[10] of the Category III bites, only 2.7% patients were prescribed human rabies immunoglobulin (HRIG) which was primarily for severe bites or bites close to or on the face

Starting the vaccine as early as possible is very important for prevention of rabies. In the present study very few got vaccine within two days, but in study in Pondicherry[11] all the animal bite victims had received rabies immunization within 24 hours of bite.

V. Conclusion

The study highlighted that the first aid measure after animal exposure is not satisfactory at the community level. Community level health worker should take up this issue and health education at community level can be imparted during home visit. Administration of vaccine is delayed and immunoglobulin administration after category III exposure was not properly followed. So, there is need for improvement of vaccine administration at health facility. The medical personnel should be trained and their work supervised for immunoglobulin administration.

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