

Title: EPIDEMIOLOGY OF ANIMAL BITE CASES ATTENDING THE ANTIRABIES CLINIC OF A RURAL TERTIARY CARE HOSPITAL OF HARYANA

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Keywords Animal bite cases, antirabies clinic

Abstract Rabies is an important public health problem worldwide and more than 50,000 people die annually of the disease. Rabies is transmitted to humans usually by bites, scratches or licks of rabid animals, dog being the commoned and primary source of infection in all rabies endemic countries and accounts for 96% of rabies cases in the Southeast Asia (SEA) region. Due to paucity of data regarding the epidemiological features of this disease the study was planned..

Original Article

EPIDEMIOLOGY OF ANIMAL BITE CASES ATTENDING THE ANTIRABIES CLINIC OF A RURAL TERTIARY CARE HOSPITAL OF HARYANA

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ABSTRACT

Rabies is an important public health problem worldwide and more than 50,000 people die annually of the disease. Rabies is transmitted to humans usually by bites, scratches or licks of rabid animals, dog being the commonest and primary source of infection in all rabies endemic countries and accounts for 96% of rabies cases in the Southeast Asia (SEA) region. Due to paucity of data regarding the epidemiological features of this disease the study was planned.

Methodology: Record based cross-sectional, carried out among the new patients attending the anti-rabies clinic BPS GMC for Women, Khanpur Kalan, Sonapat (March 2014 - February 2015).

Results: Majority of victims were males (67.9%) and major source of exposure was dog (92%). Mean age of patients was 29.06 ± 20.03 years (Median = 25 years). Average delay in reporting to anti-rabies clinic was 2.19 ± 0.12 days. 3505 (89.9%) cases were of category II while 392 (10.1%) of category III wound. 54.1% animal exposed cases had washed their wound after animal exposure and 34.2% had applied topical applicants on their wound site. Only 16.5% cases had completed the ARV prophylaxis schedule.

Conclusions and recommendations: Only a small proportion has completed post-exposure vaccination and cultural practices of topical applicants were still prevalent. There is a need to strengthen Information, Education and Communication (IEC) programme.

Key words: animal bite cases, antirabies clinic.

Introduction

Rabies is an ancient viral zoonotic disease of warm blooded animals that is invariably fatal in humans and mammals¹. It is an important public health problem worldwide and more than 50,000 people die annually of the disease². Each year, 21,000 - 24 000 people die in the South East Area Region due to rabies and India accounts for estimated 18,000 - 20,000 cases of human rabies per year³. Rabies is transmitted to humans usually by bites, scratches or licks of rabid animals, dog being the commonest and primary source of infection in all rabies endemic countries and accounts for 96% of rabies cases in the Southeast Asia (SEA) region⁴. In India also most animal bites (91.5%) are by dogs and 40% of people who are bitten by suspect rabid animals are children below the age of 15 years⁵. At the global level, more than

150 lakh people receive rabies prophylaxis annually, the majority of whom live in China and India. It is estimated that in the absence of post-exposure prophylaxis, about 3,27,000 persons would die from rabies in Asia and Africa each year⁶.

Rabies incidence in India has been constant for a decade, without any obvious declining trend. Reported incidence is probably an underestimation of true incidence because in India rabies is still not a notifiable disease⁷. The majority of bites that occur in children go unrecognized and unreported and, consequently, exposed children do not receive the benefit of timely and complete courses of post exposure prophylactic treatment³.

Moreover there are many myths, false beliefs and inappropriate practices associated with wound management after an animal bite. More faith in indigenous medicines that are of unproven efficacy

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has been highlighted in many studies⁸. There is very limited data available at national as well as at state level regarding the epidemiological features of this disease. Hence this study was carried out to understand the epidemiology of animal exposed cases coming in this rural tertiary care centre.

Aims and objectives:

1. To find out the socio-demographic profile of animal bite cases
2. To find out the distribution and pattern of animal bite cases
3. To find out wound care practices followed by animal exposed cases

Methodology:

Study setting: Immunization cum anti-rabies clinic, BPS GMC for Women Khanpur Kalan, Sonipat

Study design: Record based cross-sectional

Table : I
Profile of cases attending anti-rabies clinic during study period

Attribute	N (%)
Sex	
Male	2647 (67.9)
Female	1250 (32.1)
Age (years)	
Range	Mean
1-95 years	29.06 ± 20.03
Median	25
Source of exposure	
Dog bite	3594 (92.2)
Monkey bite	202 (5.2)
Cat bite	39(1.0)
Consumption of un-boiled milk of animals suspected of rabies	27 (0.7)
Care of suspected animals/cases died due to rabies like symptoms	20 (0.5)
Other animals bite	15 (0.4)
Category of exposure	
Category I	Nil
Category II	3505 (89.9)
Category III	392 (10.1)
Wound washing	
Done after exposure	2110 (54.1)
Not done after exposure	1787 (45.9)
Application on wound	
No application	2563 (65.8)
Red chilli	673 (17.3)
Oil	100 (2.5)
Ash	309 (8.0)
Others	233 (5.9)
Multiple application	19 (0.5)
Status of vaccination	
Completed	643 (16.5)
Not completed	3254 (83.5)

Figure in parenthesis indicate percentages

Table : II
Association of topical applicants on wound with category of wound

Category of wound	Applied Red chilli/ oil/ Ash/	No application Others	Total
Category-II	1176 (33.6)	2329 (66.4)	3505 (100.0)
Category-III	158 (40.3)	234 (59.7)	392 (100.0)
Total	1334 (34.2)	2563 (65.8)	3897 (100.0)

Figure in parenthesis indicate percentages

df=1, p-value < 0.05

Table : III
Association of status of anti-rabies vaccination with category of wound

Category of wound	Status of vaccination		Total
	Completed	Not Completed	
Category-II	1176 (33.6)	2329 (66.4)	3505 (100.0)
Category-III	158 (40.3)	234 (59.7)	392 (100.0)
Total	1334 (34.2)	2563 (65.8)	3897 (100.0)

Figure in parenthesis indicate percentages

df=1, p-value < 0.05

Table : IV
Association of status of rabies vaccination with sex

Sex	Status of vaccination		Total
	Completed	Not Completed	
Male	426 (16.1)	2221 (83.9)	2647 (100)
Female	217 (17.4)	1033 (82.6)	1250 (100)
Total	643 (16.5)	3254 (83.5)	3897 (100)

Figure in parenthesis indicate percentages

df=1, p-value < 0.05

Table : V
Association of status of rabies vaccination with age

Age (Year)	Status of vaccination		Total
	Completed	Not Completed	
1 to 10 years	170 (18.6)	745 (81.4)	915 (100)
11 – 19 years	111 (14.5)	653 (85.5)	764 (100)
20 - 59 years	283 (16.3)	1453 (83.7)	1736 (100)
60 years or more	79 (16.4)	403 (83.6)	482 (100)
Total	643 (16.5)	3254 (83.5)	3897 (100)

Figure in parenthesis indicate percentages

df=1, p-value < 0.05

Study population and sample size: All of the new patients attending the anti-rabies clinic during study period i.e. March 2014 - February 2015

Study variables : Age, sex, place of residence, category of wound, day of biting and the day of reporting to clinic, status of animal, wound toileting, any topical application on wound, adherence to required schedule of vaccination.

Exclusion criteria: cases with incomplete records.

Data entry: by trained personnel in Microsoft excel spread sheet version 2010. Data entry was supervised by the researcher to ensure the correctness of secondary data.

Ethical issue: waved off by Institutional ethical committee being a record based anonymous study there would be no ethical issue.

Statistical analysis: analyzed using Statistical Package for the Social Sciences (SPSS; Windows version 17.0) software. Percentages & proportions were applied for drawing inferences and obtaining conclusion.

Results:

In this present record based study secondary data was used. A total of 3897 cases having exposure to animals attended the anti-rabies clinic during the study period. Out of these 2647 (67.9%) were males and 1250 (32.1%) were females (male/female ratio 2.12). The age distribution of the cases ranged from 1 year to 95 years, with a mean age of 29.06 ± 20.03 years (median 25 years). Twenty patients were under age 2 years and fifteen were over age 80 years. Average delay in reporting to anti-rabies clinic was 2.19 ± 0.12 days.

Table - I: Profile of cases attending anti-rabies clinic during study period

Discussion:

This study assessed the socio-demographic profile, distribution and pattern of animal exposed cases attending the rural tertiary care centre. The study also explored the relationship of status of anti-rabies vaccination, topical applicants on wound with category of wound. All the patients coming to anti-rabies clinic received the anti-rabies vaccine free of cost. It was observed that the victims were largely males 2647 (67.9%) (male/female ratio was 2.12:1) and the major source 3594 (92.2%) of exposure was dog [Table-1]. Similar observations were found in a various studies that males affected were more⁹⁻¹² and dog bites caused maximum morbidity⁹⁻¹⁴. The overall male/female ratio of animal bite victims among Asian countries was 1.6:1¹⁵. However in a WHO survey conducted in India male/female ratio was found to be 2.19:1⁷. Likely this is related to occupational or behavioral factors or due to outdoor activity that place them in greater contact with the animal vector i.e. dog.

The present study recorded that 3505 (89.9%) cases were found to be of category II while 392 (10.1%) were of category III wound and no case was recorded as category I. Similar observations were recorded in a study by Sahu KK et al in Lukhnow in which category III exposure was found among 7.6% cases¹⁶. In contrast to that, studies conducted by Ichhpujani RL et al and Gogtay NJ described that category III exposure was 63% and 78.3% respectively^{9,10}. This might be because of the fact that institution being in remote rural area and vaccine is provided absolutely free of cost may be the reason that people of minor complaints will be reporting to the institute.

It was found that before coming to anti-rabies clinic that 2110 (54.1%) animal bite cases washed their wound with soap and water or water alone after exposure and 1334 (34.2%) animal bite cases had applied one or more topical applicants in the form of red chilli, ash, oil and others on wound site. In a study conducted by Shelke SC et al found that wound washing practices after exposure were lower (33.76%) than that of our study and similar observation regarding application of Indigenous products like chilli powder, haladi and chuna at the bite site (37%)¹³. In a multi-centric study carried out in Mumbai revealed that wound washing practices were slightly higher (58.5%) and application of chillies, salt, turmeric powder, lime, snuff powder, paste of leaves, acid, ash on wound by bite victims was 10.8% which was lower than that of our study¹¹. These practices varied from one region to another because of cultural practices and awareness regarding wound washing. Although WHO recommendations include immediate wound washing and advised nothing to be applied topically on wound¹⁷. Still more than 1/3rd of cases were applying topical applicants as per their belief system/ cultural practices while only 16% of the patients completed their post-exposure prophylactic vaccination.

In the present study topical applicants on wound were more practiced in category III bite cases than that of category II and anti-rabies vaccination (ARV) completed among category III bite cases was more than that of category II cases. The associations of topical applicants on wound and

ARV completion with category of wound was found statistically significant (p value < 0.05) [Table - II, III]. It might be due to the fact that severe bite made patients more concerned about severity of wound. Also fear of developing the disease may be the reason for topical applicants on wound and their strong belief system provoked them to do so.

In the present study it was found that age and sex had no predilection on completion of anti-rabies vaccination (ARV) [Table - IV, V].

Conclusions and recommendations:

This paper provides an overview of epidemiology of animal bites and retrospective information about animal exposed cases attending anti-rabies clinic in a rural setting. The study reports only a small proportions has completed post-exposure vaccination and cultural practices of topical applicants were still prevalent. There is a need to strengthen Information, Education and Communication (IEC) programme regarding merits of local wound management to create awareness and post-exposure prophylactic vaccination to control the deadly Rabies.

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Conflict of interest: nil declared

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