



Socio Demographic Profile and Management Practices of Animal Bite Cases Attending Anti Rabies Clinic in a Tertiary Care Centre in North Karnataka.

KEYWORDS

Animal bite, Post Exposure Prophylaxis, Anti Rabies vaccine

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ABSTRACT

Introduction: Rabies a disease of antiquity continues to be a major public health problem in India. India contributes the major share of animal bites as well as global deaths due to rabies. Objectives: To understand the demographic profile of animal bite cases and to assess the management practices of animal bites among the study population.

Methodology: This cross sectional study was conducted among 310 animal bite cases attending anti rabies clinic. The data was collected by using a predesigned, pretested questionnaire.

Results: Out of total 310 cases of animal bites, majority (40%) belonged to less than 20 years of age-group. Pet dogs were involved in 60% of cases. Category II bites were seen in 214(69%) of cases. In 81.4% cases lower extremities were affected. Only 79 cases had attended the ARV clinic within 24 hours of bite.

Conclusion: Local wound treatment immediate after an animal bite is an important step in the management of any animal bite case and this was lacking in most of the subjects.

INTRODUCTION

Animal bites pose a major public health problem in children and adults worldwide. Rabies is one of the oldest recognized disease affecting humans. It is a viral zoonosis that occurs in >100 countries and territories. Although a number of carnivores and bat species serve as natural reservoirs, rabies in dogs is the source of 99% of human infections and poses a potential threat to >3.3 billion people(1). Death caused by rabies is responsible for 1.74 million Disability Adjusted Life Years (DALY) each year (2). The estimated annual cost of rabies in Asia is US \$ 563 million. In India, patients pay for nearly half of financial burden attributed to rabies. An estimated 45% of all deaths from rabies occur in South East Asia (3). The situation is especially pronounced in India, which reports about 18,000 to 20,000 cases of rabies a year and about 36% of the world's deaths from the disease (4). These bites not only cause increase morbidity and mortality but also loss of man-days and money on treatment. About 1 million people receive post exposure antirabies vaccine and children constitute 35-40% of these (5). Although cases of dog bite contribute a problem of considerable magnitude in terms of man days lost, mortality and financial loss, not all the victims of dog bite seek medical help in time.

Rabies is transmitted to humans through exposure to saliva from infected animals (from bites, scratches, or licks on broken skin and mucous membranes). The diagnosis of rabies is challenging because of the long incubation period and lack of specificity of early prodromal and neurologic symptoms. In 2004, cases of rabies transmission through solid organ transplantation were reported in the United States and Europe. The infection eventually evolves into a viral encephalitis (furious rabies), with classic symptoms of hydrophobia, aerophobia, hyper excitability and autonomic dysfunction. Cases of human rabies with overt clinical symptoms are essentially fatal. No antiviral or immunomodulating drugs have been found to be effective

for treatment. Therefore, a preventive strategy is most appropriate. With the availability of safe and effective tissue culture vaccines prevention of this dreaded disease is virtually assured by immediate and appropriate post exposure treatment. This is a three pronged approach including proper wound management, judicious use of antirabies serum and modern tissue culture vaccines (6). In India, about 15 million people are bitten by animals, mostly dogs, every year and need PEP. The annual number of person- days lost because of animal bites is 38 million, and the cost of post-bite treatment is about \$25 million (7).

In view of this, the current study was carried out to know the profile of animal bite cases coming for treatment in the hospitals and to know their pre- treatment practices.

Objectives:

- 1) To understand the demographic profile of animal bite cases.
- 2) To assess the management practices of animal bites among the study population

Materials and Methods

Present study was conducted in anti rabies clinic of Belagavi Institute of Medical Science, Belagavi from 1st May to 30th July 2014. All the animal bite cases who attended the anti rabies clinic were interviewed by using a pretested, predesigned, structured questionnaire to elicit the required information like age, sex, address, type and time of animal bite, treatment received, etc. Classification of exposures was done as per guidelines given by W.H.O (8). A bite was considered as provoked if it resulted from subject initiating interaction with the animal such as playing with them or annoying them during meal.

RESULTS:

As shown in Table 1, total 310 cases were reported during the study period out of which male constituted 223 (71.9%) cases with male female ratio 2.56:1. Majority i.e. 124 (40%) were belonging to age group less than 20 years followed by the age group 40-49 years(14.2%). When the occupation of the animal bite cases was studied, most of the cases occurred among people with the occupations like farmer, driver, labourer, watchman, student, etc (86.5%). Fewer cases occurred among people with occupations like, businessman, housewife, retired persons, etc. Most of the cases were educated up to primary school (35%), followed by 30% up to secondary and 19.6% cases were illiterate. More than half of the animal bite victims were from socioeconomic class IV and V (62.6%) and from rural areas (46.8%).

As shown in Table 2, dog was the most common (95.8%) biting animal followed by rodents (1.3%) and cat (0.9%). Monkey and pig had bitten to 2 persons each. Majority (53.2%) of them did not know the immunization status of biting animal. Pet dogs were responsible in 186(60%) of cases while 114(36.8%) cases were bitten by stray dogs. Class II exposures were seen in 214(69%) and 52 (16.8%) were of class III. Bites involved the lower limb in 217 (70%) of the victims followed by upper limb in 73(23.5%), trunk in 22(7.1%) and face in 7(2.3%) patients.

As shown in figure 1, only 198 (64%) subjects did immediate pre-treatment at the site of bite. Among them 130(65.6%) washed the wound with soap and water, 41(20.7%) applied lime, 11(5.5%) applied turmeric, 9(4.5%) tying of the limb, 7(3.5%) applied other applicants like chilli powder, talc powder etc. Of the total subjects who washed the wound with soap and water, 29 (22.3%) cases also applied local applications like lime, turmeric, talc powder, chilli powder, oil, etc. before attending the antirabies clinic.

Majority (83.8%) of cases attended the anti rabies clinic within first three days of animal bite (figure 2). Out of 52 cases of category 3, only 6(1.9%) cases received anti rabies immunoglobulins.

Discussion:

In the present study, dog was found to be the most common biting animal (95.8%). This is similar to the findings of Sudarshan et al(9), Rasania et al(10) and Shetty et al(11). The maximum number of cases were from below 20 years of age (40%) in the present study. This finding is similar to that reported by Rasania et al(10) and Shetty et al(11) where the maximum number of cases were in the age category 0-14 years. The male to female ratio of animal bite cases in the present study as 2.56:1 and study at Pune by Shetty et al(11) reported the ratio of 1.98:1. Rasania et al(10) also reported male preponderance among animal bite cases. Majority (62.6%) of the victims were from socioeconomic class IV and V and 46.8% were from rural areas. Farmers and labourers in rural areas proceed for work in early hours of the day. Therefore, they are more likely to be exposed to stray animals. In another study, 62.1% cases of animal bites from rural areas (12).

Overall lower limbs were the main site of bite as these are most easily approachable part of the body for an animal. Head and face bites were common in children. Majority of cases in the present study had category II bites which is similar to a study by Rasania et al (10). Only 42% of the cases washed the wound with soap and water. Ro-

zario et al (13) reported that in 2004, only 39.5% of bite victims washed the wounds with soap and water. The practice of washing the wound immediately with soap and water was reported to be poor in the several other studies like Sheetal et al (5.7%), Anita et al (1.59%), Shetty et al (3.6%). The practice of application of local remedies like lime (13.2%), turmeric (3.5%), tying of limb (2.9%), etc was also found in the present study which was relatively less as compared to the other similar studies like Sheetal et al (66.3%), Anita et al (85.6%).

Majority of cases did not report immediately to the health care facilities after animal bites like in a study by Sharma et al (14) while Shetty et al (11) reported that 63.2% of cases reported within 24 hours of the bite. The delayed attendance to antirabies clinic by the animal bite cases in the present study was due to lack of awareness about post exposure prophylactic treatment.

Conclusion

Dogs were the main biting animal, affecting mostly the children and adult and the bite victims did not do proper wound care. The indigenous treatment was quite prevalent even amongst educated people, mainly because of ignorance regarding prognosis of rabies. Even at tertiary care centre, quality of primary wound management and post exposure prophylaxis was compromised. The further reduction of incidence of rabies in India is possible through improved coverage with modern rabies vaccines and intensifying public education about the disease and making availability of rabies immunoglobulins in all health care centres. The legislative measures like registration and licensing of all domestic dogs and restraint of dogs in public places and encouraging owners to properly immunize and contain their dogs needs special attention.

Table1: Socio demographic profile of study subjects

Particulars	Male N=223(%)	Female N=87(%)	Total N=310(%)
Age (yrs):			
0-9	28 (12.6%)	18 (20.7%)	46 (14.8%)
10-19	59 (26.4%)	19 (21.9%)	78 (25.2%)
20-29	34 (15.2%)	08 (09.2%)	42 (13.5%)
30-39	28 (12.6%)	07 (08.1%)	35 (11.3%)
40-49	27 (12.1%)	17 (19.5%)	44 (14.2%)
50-59	19 (08.5%)	09 (10.3%)	28 (09.0%)
≥60	28 (12.6%)	09 (10.3%)	37 (12.0%)
Occupation:			
Farmer	46 (20.6%)	17 (19.5%)	63 (20.3%)
Student	79 (35.5%)	33 (38.0%)	112 (36.2%)
Businessmen	15 (06.7%)	0	15 (04.8%)
Service	25 (11.2%)	02 (02.3%)	27 (08.7%)
Others	38 (26.0%)	35 (40.2%)	93 (30.0%)
Residence:			
Urban	116 (52.0%)	49 (56.3%)	165 (53.2%)
Rural	107 (48.0%)	38 (43.7%)	145 (46.8%)
Education:			
Illiterate	33 (14.8%)	28 (32.2%)	61 (19.6%)
Primary School	76 (34.1%)	32 (37.0%)	108 (35.0%)
Secondary School	76 (34.1%)	17 (19.5%)	93 (30.0%)
Graduate & above	30 (13.5%)	05 (05.7%)	35 (11.2%)
Not applicable	08 (03.5%)	05 (05.7%)	13 (04.2%)
Socioeconomic Status:			
Class I	19 (08.5%)	03 (03.5%)	22 (07.1%)
Class II	38 (17.0%)	07 (08.1%)	45 (14.5%)
Class III	38 (17.0%)	11 (12.6%)	49 (15.8%)
Class IV	74 (33.3%)	35 (40.2%)	109 (35.2%)
Class V	54 (24.2%)	31 (35.6%)	85 (27.4%)

Table 2: Profile of animal bites

Particulars	Male N=223(%)	Female N=87(%)	Total N=310(%)
Biting animal:			
Dog	215 (96.4%)	82 (94.3)	297(95.8%)
Cat	01 (00.5%)	02 (02.3%)	03(00.9%)
Monkey	02 (00.9%)	00	02(00.7%)
Rodents	02 (00.9%)	02(02.3%)	04(01.3%)
Others	03 (01.3%)	01(01.1%)	04(01.3%)
Immunization status of biting animal			
Complete	24 (10.7%)	06 (07.0%)	30(09.7%)
Incomplete	20 (09.0%)	09 (10.3%)	29(09.4%)
Not immunized	58 (26.0%)	28 (32.1%)	86(27.7%)
Do not know	121 (54.3%)	44 (50.6%)	165(53.2%)
Type of animal:			
Pet	127(57.0%)	59 (67.8%)	186(60.0%)
Stray	91(40.8%)	23 (26.4%)	114(36.8%)
Don't know	05(02.2%)	05 (05.8%)	10(03.2%)
Category of bite			
Category I	33(14.8%)	11(12.6%)	44(14.2%)
Category II	153(68.6%)	61(70.1%)	214(69.0%)
Category III	37(16.6%)	15(17.3%)	52(16.8%)
Site of bite			
Upper limb	61(27.3)	12(13.8%)	73(23.5%)
Lower limb	148(66.4%)	69(79.3%)	217(70.0%)
Trunk	17(07.6%)	05(05.7%)	22(07.1%)
Head or face	05(02.2%)	02(02.3%)	07(02.3%)

Figure1: Distribution of study subjects according to pre treatment practices after animal bites.

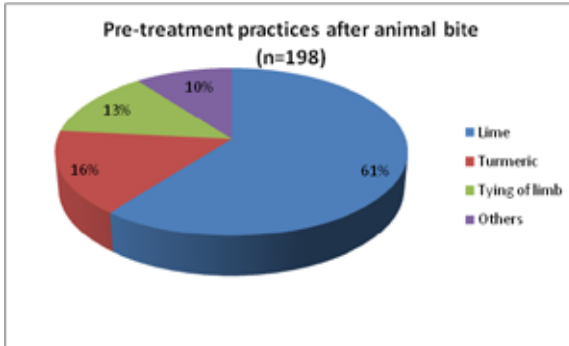
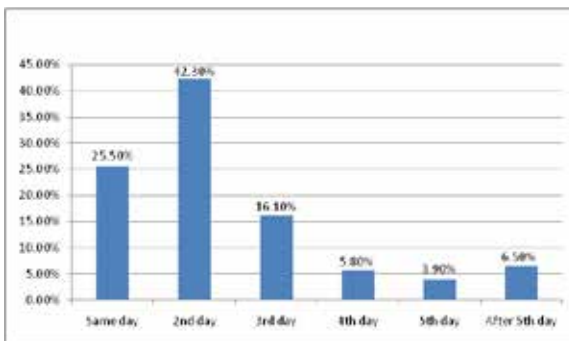


Figure 2: Time interval between animal bite and visiting antirabies clinic.



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