

Retrospective Study of Various Animal's Bites at District Hospital in Maharashtra

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Abstract

Background: The threat of animal attacks on people is still a huge medico-social problem as these attacks result in millions of death and injuries worldwide. Snake bite along with other animal bites like dog bite, scorpion bite is a neglected public health problem. Snake bites are the common cause of mortality and morbidity in tropical countries. **Objectives:** This study was conducted to assess the extent of various bites and study the socio-demographic factors, cure rate and mortality rates of various bites at District Hospital. **Materials & Methods:** A retrospective descriptive study was carried out at the District Civil Hospital in Ahmednagar. Data regarding various animal bite cases coming to the District Hospital from January 2004 to December 2008 was collected from the registers maintained in the medical record department. A pre-designed and pre-tested questionnaire was used for the data collection. **Results:** In the present study, a total of 5461 cases of animal bites were admitted in the hospital. Majority (54.56%) were males. Maximum cases were of dog bite, 3250 (59.5%), followed by snake bites 1620 (29.6%) and 23 (0.24%) cases were of scorpion bite. Maximum cases amongst were dog bites and from 10-20 years age group, whereas snake bite was common in > 40 years. **Conclusion:** Majority bites were due to dog bites followed by snake bites. Awareness regarding early management of snake bites must be increased to decrease the mortality. Patient education is important for decreasing the incidence and morbidity of animal bites.

Key words: Animal bites; Dog bite; Snake Bite; Scorpion bite.

Introduction

The threat of animal attacks on people is still a huge medico-social problem as these attacks result in millions of death and injuries worldwide [1]. Snake bite along with other animal bites like dog bite, scorpion bite is a neglected public health problem. Snake bites are the common cause of mortality and morbidity in tropical countries. On an average 5 million snake bite cases occur worldwide causing 1 lakh deaths [2]. Nearly 2 lakh persons fall prey to snake bite every year in India and out of them 35,000 – 50,000 die every

year. But the data on morbidity of snake bite are unreliable due to improper reporting system [3]. There is a sharply increasing trend of bites of animal and insects like dogs, monkey, wasp, snake, scorpion etc, which pose a major challenge for public health authorities. These bites not only cause increased morbidity and mortality but also loss of man-days and money on treatment. Human mortality from endemic canine rabies was estimated to be 55,000 deaths per year by 56% in Asia [4]. In Maharashtra, highest incidences of snake bites have been reported (70 bites per 1, 00,000 populations and mortality of 2.4 per 1, 00,000 per year [5]. Hence the present study was conducted to assess the extent of various bites at District hospital, to study the socio-demographic factors of various bites with respect to age, sex and occupation and to study the cure rate and mortality rate of various bites.

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Materials & methods

A retrospective descriptive record based study was carried out at the District Civil

Hospital in Ahmednagar. It is the largest district of Maharashtra. Data regarding various animal bites coming to the District Hospital from January 2004 to December 2008 was collected from the registers maintained in the medical record department. A total of 5461 cases of animal bites were admitted in the hospital during the five years of the study period. A pre-designed and pre-tested questionnaire was used to get information regarding the data from registers maintained in the medical record department of District Hospital. Data regarding type of bite, socio-demographic details of cases, time interval between bite and hospital admission, the outcome of the bite was recorded. Cure rate and mortality rates of various bites was also studied. Records of all the cases were analyzed. Consent from Civil surgeon was taken prior to conduction of the study. Ethical Committee of the institute approved the study. Data were entered in MS Excel. Tests of percentages and proportions were used for statistical analysis.

Results

A total of 5461 cases of animal bites were admitted in the hospital during the study period of five years. The graph shows the pattern of various animal bites over the five years. The scorpion and other bites have remained stationary over the five years. The dog bite and snake bite cases increased during

the last year (2007-08) of the study period. Majority 2980 (54.56%) were males and 2481 (45.43%) were females. The male to female ratio of the bite cases was found to be 1.2:1. Majority of cases was of dog bites 3250 (59.5%), followed by snake bites 1620 (29.6%) and 23 (0.5%) cases were of scorpion bite. Rest 563 (10.4%) of the total bites were due to other bites like insect, bee, rat, cat which were grouped as miscellaneous. Out of total 3250 dog bites, maximum 1023 (31.5%) was in 10-20 years age group. Out of 1620 cases of snake bite, 445 (27.5%) were in age group greater than 40 years. 183 (30.9%) cases of miscellaneous bites were among the 11-20 years age group. 1003 (62.3%) cases of snake bites were farmers and 1023 (31.5%) cases of dog bites were students. Out of total 1620 snake bites, 316 (19.5%) were poisonous and majority 1304 (80.5%) were non-poisonous. The time interval between bite and hospital admission was 2-12 hours for maximum 886 (54.6%) cases of snake bites and maximum 2016 (62.0%) patients of dog bites reached the hospital within 12-24 hours.

The prognosis was classified into cured, expired and referred. Out of total 1620 cases of snake bites, 1506 (93%) were cured. 93 (5.7%) died due to snake bite and the rest were referred to other tertiary health centres. The mortality rate was 5.74% for snake bite. There were 8 (0.3%) deaths due to rabies, whereas maximum 3242 (99.7%) were cured out of total 3250 dog bites. The cure rate was 99.7% for dog bites.

Graph 1: Year wise pattern of animal bites (2004-2008), (n=5461)

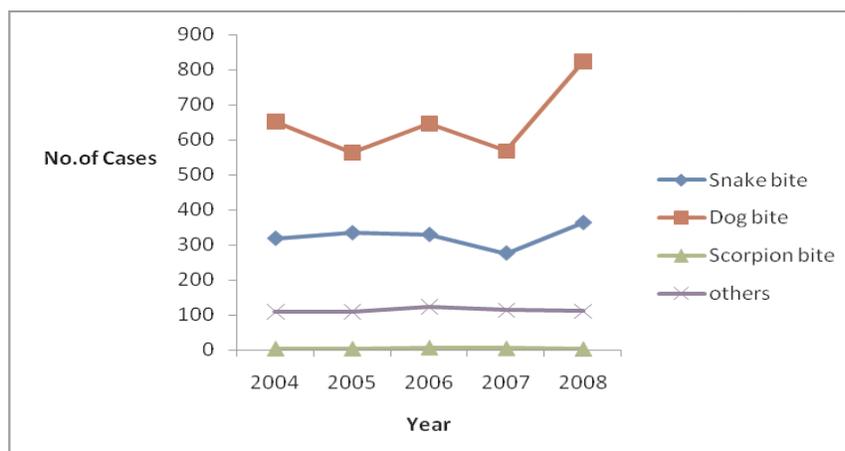


Table 1: Distribution of cases according to type of bite (n=5461)

Age (years)	Snake bite	Dog bite	Miscellaneous
0-10	119 (7.3)	813 (25.0)	107 (18.2)
11-20	268 (16.6)	1023 (31.5)	183 (30.9)
21-30	402 (24.8)	634 (19.5)	109 (18.4)
31-40	386 (23.8)	536 (16.5)	128 (21.7)
>40	445 (27.5)	241 (7.5)	64 (10.8)
Total	1620 (29.7)	3250 (59.5)	591 (10.8)

Table 2: Distribution of cases as per time interval between bite and hospital admission (n=5461)

Time interval	Snake bite	Dog bite	Miscellaneous
< 2	100 (6.2)	167 (5.1)	25 (4.2)
2-12	886 (54.6)	402 (12.4)	324 (54.8)
12-24	565 (34.9)	2016 (62.0)	179 (30.3)
24-36	56 (3.5)	339 (10.5)	52 (8.8)
36-48	13 (0.8)	326 (10.0)	11 (1.9)
Total	1620	3250	591

(Figures in the parenthesis indicate percentages)

Discussion

Animal bites pose a major public health threat both in developed and developing nations. In the present study, the dog was found to be the most common biting animal. This is similar to findings of Sudarshan et al [6], Sharma et al [7], Shetty et al [8] and Vyas S et al [9]. The results of our study regarding higher incidence of dog bites in 10-20 years are supported by other studies conducted in India. Goel S et al [10] showed in their study that most dog bite cases were observed in the age-group of 6-15 years, while 100% snakebite was observed in higher age-group (>15 years). Singh JS et al [11], Shetty et al [8] also depicts that more than half of animal bite victims were children of age less than 14 years. Punde DP [12] showed that 82.9% bites were in younger age groups. Maximum cases of snake bites were farmers. Similarly, Phalke DB et al [13] found that snake bites were maximum of the agricultural workers. In the present study, the time of arrival at the hospital after the bite was

2-12 hours in most cases of snake bites. Hayat AS et al [14] showed that mean time to arrival at the hospital after the bite was 3 hours. The mortality for snake bites in our study was 5.74%. Inamdar IF et al [15] showed that case fatality rates were higher for females (8.78%) and for bites by neurotoxic snakes (8.91%). Similar finding was observed by Kalantri S [16] with the overall mortality rate for snake bite of 11%.

Conclusion

In our study, majority bites were due to dog bites followed by snake bites. Mortality can be reduced by educating people that not all snakes are poisonous and not all poisonous bites end fatally. Awareness regarding early management of snake bites must be increased to decrease the mortality. Patient education is important for decreasing the incidence and morbidity of animal bites. Health education regarding anti-snake venom and early first aid and management must be increased. The community must be educated regarding the

complete schedule of vaccination in dog bite case. For this, NGO along with Governmental bodies should build a strong partnership at local, regional and National level.

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