Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20193499

Differences in health seeking behavior of animal bite patients between urban and rural areas of Aurangabad city

Rahul R. Chopade*

Department of Community Medicine, BKL Walawalkar Rural Medical College, Sawarde, Maharashtra, India

Received: 07 July2019 Revised: 22 July 2019 Accepted: 23 July 2019

*Correspondence: Dr. Rahul R. Chopade,

E-mail: chopader06@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The present study explores the variation in epidemiology and treatment seeking behavior of animal bite patients in rural and urban areas. The rural urban differences would be imperative in effective policy making, planning and implementation of preventive and control measures.

Methods: This cross-sectional study was carried out in 50 urban patients were from anti-rabies vaccination clinic of government medical college Aurangabad and 50 rural patients from areas of Paithan from January 2016 to May 2016. All patients were subjected to socio-demographic profile and detailed history of animal bites, wound toileting and treatment including both active and passive immunization.

Results: Overall, 66% were males and 34% were females. Most of the people in rural area were bitten by stray dog (42%) followed by wild animals like pig, monkey (16%) as compared with 38% of stray dog bite cases in urban areas. The commonest site of animal bites was found to be lower limb followed by upper limb, trunk and head in both areas. Maximum cases belonged to category III (84%) in rural areas followed by category I (10%). Also, most of the rural patients (46%) preferred home remedies of treatment i.e. application of oil, salt, red chilies, and turmeric paste applications as compared with 10% urban patients.

Conclusions: Our study revealed that majority of the patients from rural areas were inflicted upon by stray dogs (54%) and relied more upon home remedies thereby reporting late to government hospitals.

Keywords: Health seeking behavior, Animal bite, Anti-rabies vaccine, Urban, Rural

INTRODUCTION

Mammals that live closely and interact with man can inflict injury on adults and children through bites and can cause highly fatal rabies infection. Rabies is a major public health problem worldwide particularly in developing countries like India. Rabies continues to be a major public health problem in India killing an estimated 20000 people annually. Human rabies despite advances in medical sciences still remains practically a cent percent fatal disease. It is estimated that annually about 20,000 person's die of this disease and 17 million animal/dog bites occur in India. The figure is alarming and

immediate action is required to stop this scourge.³⁻⁵ The reason for this high number of mortality due to rabies is attributable to lack of awareness among people about management of animal bites which prevents them from obtaining medical care including post exposure prophylaxis (PEP) and most importantly the health seeking behavior of people regarding animal bite.⁶

Moreover, there are many myths, superstitions and false beliefs prevalent regarding wound care among layman. These include home remedies like application of oils, salt, lime, herbs, red chilies and turmeric paste on the wound inflicted by animal bites. It is noteworthy that people have more faith in indigenous and traditional medicines having unproven efficacy. Few people also have tendency of not washing the wound properly with soap and water because of unknown fears that the entry of water into the wound might cause infection. With this background, the present study has been undertaken to explore the variation in epidemiology and to assess the health seeking behavior of animal bite patients in rural and urban areas. The rural urban differences would be imperative in effective policy making, planning and implementation of preventive and control measures.

METHODS

It was a hospital based cross-sectional descriptive study carried out in rural areas of Paithan and urban area of Aurangabad city. The study was conducted from January 2016 to May 2016. Study subjects were 100 animal bite patients drawn by random selection from the rural and urban areas

After obtaining written informed consent from the patients, 50 urban patients were interviewed from antirabies vaccination clinic of Government Medical College, Aurangabad and 50 rural patients interviewed from primary health center of Paithan. With the aid of preformed structured questionnaire, all patients were subjected to socio-demographic profile and detailed history of animal bites, wound toileting and treatment including both active and passive immunization. Also, history regarding health seeking behavior of animal bite patients like application of oils, salt, lime, herbs, red chilies and turmeric paste on the wound was inquired.

Statistical analysis was done by simple proportions and percentages.

RESULTS

The number of animal bite patients studied was 50 in rural and 50 in urban areas. Children up to the age of 10 years were found to be 26% in rural areas and 12% in urban areas. Maximum number of patients was found in the age group of 20-40 years in both rural and urban areas. Considering gender distribution of patients overall, 66% were males and 34% were females. Almost same pattern of sex distribution was found in rural and urban areas. More than 50% of patients from rural areas were

illiterate (60%) whereas only 36% of illiterates were from urban area. Most of the people in rural areas were involved in farming (36%) as compared to 16% in urban areas. The proportion of rural patients belonging to low socioeconomic status was more (84%) as compared to urban patients (28%). Also, some or other type of addiction (smoking, chewing tobacco, alcohol) was also seen in rural (18%) and urban (11%) patients. The above findings are summarized in Table 1.

Table 2 shows the distribution of study subjects according to type of animal bite. Most of the patients in rural area were bitten by stray dog (42%) followed by wild animals like pig (8%), monkey (8%) as compared with 38% of stray dog bite cases in urban areas.

Table 1: Socio-demographic correlates of study subjects.

	Urban					
(n=50)	(n=50)					
N (%)	N (%)					
Age group (years)						
13 (26)	6 (12)					
10 (20)	3 (6)					
18 (36)	21 (42)					
6 (12)	16 (32)					
3 (6)	4 (8)					
Gender						
31 (62)	35 (70)					
19 (38)	15 (30)					
Educational status						
30 (60)	18 (36)					
10 (20)	17 (34)					
10 (20)	15 (30)					
24 (48)	14 (28)					
18 (36)	8 (16)					
8 (16)	28 (56)					
Socio-economic status						
8 (16)	36 (72)					
42 (84)	14 (28)					
Addictions (tobacco, alcohol, smoking)						
18 (36)	11 (22)					
32 (64)	39 (78)					
	13 (26) 10 (20) 18 (36) 6 (12) 3 (6) 31 (62) 19 (38) 30 (60) 10 (20) 10 (20) 24 (48) 18 (36) 8 (16) 8 (16) 42 (84) ol, smoking) 18 (36)					

Table 2: Distribution of study subjects according to type of animal bite.

	Rural (n=50)			Urban (n=50)		
Type of animal	Pet (%)	Stray	Wild	Pet	Stray	Wild
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Dog	19 (38)	21 (42)	-	17 (34)	19 (38)	-
Cat	2 (4)	-	-	-	-	-
Pig	-	-	4 (8)	-	-	4 (8)
Monkey	-	-	4 (8)	-	-	5 (10)
Others	2 (4)	-	-	5 (10)	-	-

Table 3: Characteristics of animal bites.

Characteristic	Rural (n=50)	Urban (n=50)			
	N (%)	N (%)			
Site of bite					
Lower limb	25 (50)	20 (40)			
Upper limb	17 (34)	13 (26)			
Head neck face	3 (6)	2 (4)			
Trunk	5 (10)	2 (4)			
Category of exposure					
Category I	5 (10)	3 (6)			
Category II	3 (6)	8 (16)			
Category III	42 (84)	39 (78)			
Mode of bite					
Provoked	19 (38)	7 (14)			
Unprovoked	30 (60)	43 (86)			
Activity during bite					
Playing	17 (34)	5 (10)			
Walking	14 (28)	30 (60)			
Sleeping	3 (6)	2 (4)			
Working	16 (32)	13 (26)			
Reporting time					
Within 24 hours	26 (52)	33 (66)			
Within 10 days	15 (30)	14 (28)			
After 10 days	9 (18)	2 (4)			
Type of wound					
Superficial (abrasion)	36 (72)	41(82)			
Deep (lacerated)	14 (28)	9 (18)			
Previous history of animal bite					
Present	11 (22)	5 (10)			
Absent	39 (78)	45 (90)			

Table 3 shows the characteristics of animal bites. The commonest site of animal bites was found to be lower limb followed by upper limb, trunk and head in both rural and urban areas. Maximum cases belonged to category III (84%) in rural areas followed by category I (10%); also, in urban areas most patients belonged to category III (78%) followed by category II (16%). 86% of the dog bites were found to be unprovoked in urban areas and 60% in rural areas. Animal bites were mainly inflicted upon during the activity of children playing (34% in rural areas) and during walking (60% in urban areas). Moreover, rural patients took longer time (>48 hours) from exposure to reporting at anti-rabies vaccination clinic as they were following home remedies as compared with urban patients. The children mainly presented with deep tissue injuries in both the areas with predominance among rural areas (28%) as compared to 18% in urban areas. Previous history of animal bites was present in 22% of rural patients and 10% of urban patients.

Table 4 shows the distribution of study subjects according to treatment mode and health seeking behavior. Out of 50 rural patients, 54% had received tetanus toxoid (TT) vaccine, whereas in urban areas 96% had received TT vaccine. Active immunization i.e. anti-rabies vaccine

(ARV) was administered to 48% patients in rural areas and 58% in urban areas. Whereas passive immunization i.e. immunoglobulin (equirab) was given to 26% in rural and 10% in urban areas.

Table 4: Distribution of study subjects according to treatment mode and health seeking behavior.

Treatment	Rural (n=50) N (%)	Urban (n=50) N (%)
Injection tetanus toxoid	28 (56)	48 (96)
Active immunization (Antirabies vaccine)	24 (48)	29 (58)
Passive immunization (Immunoglobulin-equirab)	13 (26)	5 (10)
Observation for 10 days	19 (38)	21 (42)
Other (antibiotics, antacids, painkiller)	26 (52)	21 (42)
Local toileting done	27 (54)	45 (90)
Home remedies (application of oil/salt/ lime/turmeric paste)	23 (46)	5 (10)

Figures in parentheses indicate percentage.

Also, most of the rural patients (46%) preferred home remedies of treatment i.e. application of oil, salt, lime, red chilies, and turmeric paste applications as compared with 10% urban patients who preferred visiting government hospitals for treatment. Local toileting i.e. washing the wound with soap and water was done in 54% of rural patients and 90% of urban patients.

DISCUSSION

This cross-sectional study conducted in rural area of Paithan and urban area of Aurangabad city aims at detecting rural urban differences in health seeking behavior for dog bite cases among patients from rural and urban areas. Most of the patients in rural area were bitten by stray dog (42%) followed by wild animals like pig (8%), monkey (8%) as compared with 38% of stray dog bite cases in urban areas. Bite by other mammals included rat, rabbit, mice and human bite. Our study findings are consistent with other studies done by Shetty et al, Agrawal et al and Sudarshan et al who also demonstrated more animal bite cases in rural areas. 8-10 This could be attributed to the fact that rural people, mainly farmers and laborers proceed for work in early hours of the day and continue work till late evening thereby getting more exposed to animal bites.

A majority of the patients with animal bites were males from both rural as well as urban area. Other studies from India show the same results. 11,12

In most of the family's males are the main earners, and they are outside their homes for relatively longer periods as compared to women and so have higher risk of exposure to dogs and other animals. Most common site of dog bite was lower limbs in rural (50%) as well as urban area (40%) and most common category of wound is category III in both rural and urban area which is different from other studies which shows that category II dog bite was most common followed by category III.

Most of the victims were aware about the fatality of rabies and number of cases reporting within 24 hours for medical help was 52% in rural area and 66% in urban area. This was less in number when compared with the studies done by Jain et al (77%). ¹³

The post-exposure prophylactic immunization rate among dog bite cases was high in urban area (58%) as compared to rural area (48%). Awareness regarding rabies and access to healthcare services in the form of anti-rabies clinics may be higher in urban area. Government medical college and hospital, Aurangabad and Municipal Corporation Dispensaries provide ARV and immunoglobulin free of cost to dog bite cases coming to their health centers.

Local washing of wound with soap and water was done by only 54% in rural area and nearly 90% people in urban area. There are also many misconceptions associated with animal bite management like application of oils, salt, lime herbs and red chilies on the wound inflicted by rabid animals. 46% of people from rural area give history of using such home remedies for dog bite wound management as compared to only 10% in urban area. Washing of wound with soap and water immediately after the animal bite will help to remove saliva of animal as well as any soil particle from wound and it will reduce the chance of development of rabies as well as tetanus. 14 It was evident that, the people were not aware of its importance and/or had no confidence in its usefulness as an anti-rabies measure.

CONCLUSION

Our study revealed that majority of the patients from rural areas were inflicted upon by stray dogs (54%) and relied more upon home remedies thereby reporting late to government hospitals. Thus, it is evident from the present study that majority of the patients in both rural and urban areas had little knowledge about rabies, its transmission, management and prophylaxis. It is, therefore, of utmost importance that adults and children should be properly educated about rabies so that they can avoid dogs, recognize potential exposures, report to health center and pass on the knowledge to their peers.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- Osaghae DO. Animal and human bites in children. West Afr J Med. 2011;30(6):421-4.
- 2. World health organisation. WHO Expert consultation on rabies. First report, Technical Report Series 931, Genewa, Switzerland, 2005.
- Sudarshan MK, Ashwath Narayana DH. A Survey of hospitals managing human rabies cases in India. Indian J Public Health. 2010;54(1):40-1.
- Sudarshan MK, Madhusudana SN, Mahendra BJ, Rao NS, Ashwath Narayana DH, Rahman SA. Assessing the burden of human rabies in India: results of a National multicenter epidemiological survey. Int J Infect Dis. 2007;11:29-35.
- 5. Dzikwi AA, Ibrahim AS, Umoh JU. Knowledge, attitude and practice about rabies, among children receiving formal and informal education in Samaru, Zaria, Nigeria. Glob J Health Sci. 2012;4(5):132-9.
- Mahendra BJ, Harish BR, Manjunath M, Nagaraja Goud, Anil Kumar K. A study of profile of reexposure cases and their compliance to the Intra dermal rabies booster vaccination at the anti rabies clinic of Mandya Institute of Medical Sciences, Mandya. APCRI J. 2012;13(2):27-8.
- Jairaj Singh H, Bansal R, Chaudhary S, Hanspal R, Parashar P. A comparative study of health seeking behaviour of animal bite cases in rural and urban areas of Meerut District. APCRI J. 2012;13(2):18-20.
- Shetty PA, Chaturvedi S, Singh Z. Profile of animal bite cases in Pune. J Commun Dis. 2005;37(1):66-72
- 9. Agarwal N, Reddajah VP. Epidemiology of dog bites A community based study in India. Trop Doct. 2004;34(2):76-8.
- 10. Sudarshan MK, Mahendra BJ, Narayan DH. A community survey of dog bites, antirabies treatment, rabies and dog population management in Banglore city. J Commun Dis. 2001;33(4):245-51.
- 11. Lai P, Rawat A, Sagar A, Tiwari KN. Prevalence of dog-bites in Delhi: Knowledge and practices of residents regarding prevention and control of rabies. Health Popul Perspect Issues. 2005;28:50–7.
- 12. Agarvval N, Reddaiah VP. Knowledge, attitude and practice following dog bite: A community-based epidemiological study. Perspect Iss. 2003;26:154–61.
- Jain P, Jain G. Study of general awareness, attitude, behaviour, and practice study on dog bites and its management in the context of prevention of rabies among the victims of dog bite attending the OPD services of CHC Muradnagar. J Family Med Prim Care. 2014;3:355-8.
- World Health Organization. WHO Expert Committee on Rabies, Eighth Report. Geneva, World Health Organization, WHO Technical Report Series 824, 1992.

Cite this article as: Chopade RR. Differences in health seeking behavior of animal bite patients between urban and rural areas of Aurangabad city. Int J Community Med Public Health 2019;6:3630-3.