Original Article

Perceptions and treatment seeking behaviour of dog bite patients attending regional tertiary care hospital of central Gujarat, India

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ABSTRACT

Background: Rabies is practically 100% fatal zoonotic disease but easily preventable with timely administration of vaccine to the dog bite victim, but very commonly myths and practices amongst people prevent them for adequate and appropriate treatment.

Aim & Objective: To know perception of dog bite patients about Anti-rabies Vaccination (ARV) and to know health seeking behaviour of dog bite victims attending a tertiary care hospital.

Material and Methods: A hospital based study was conducted among the animal bite victims who had attended Anti Rabies Clinic from February 2012 to May 2012 after taking their informed verbal consent. All enrolled patients were interviewed using a pretested semi-structured questionnaire.

Results: Majority of the patients (45.6%) in the study were more than 50 years of age. Almost three-fourths of the study population was male (71.7%). One thirds of the population had primary education while 14.2% of the patients were illiterate. Most of the patients (64.1%) lived within 10 kilometres distance from ARV Clinic. There were 37.6% patients who had applied nothing on the wound site, while only 11% of them had washed the wound with soap and water. 93.9% (385) had approached other health facilities before coming to the ARV Clinic, of which no treatment/care was given in 18.8% of the cases.

Conclusion: Animal bite was more common among adults, adolescents and males. The bite victims did not take proper wound care nor take prompt action to reach the health facility after the bite. Indigenous methods for wound care were quite prevalent.

Key words: ARV, Health Seeking behaviour

INTRODUCTION

Rabies is a practically 100% fatal Zoonotic disease; but easily preventable with timely and appropriate administration of vaccine to the dog bite victim. Very commonly myths and practices amongst people prevent them from taking adequate and appropriate treatment. The incidence of animal bites is 17.4 per 1000 population. A person is bitten every 2 seconds, and someone dies from rabies every 30 minutes, according to The Association for the Prevention and Control of Rabies in India [1] In this regard perception of victim and their attitude towards treatment forms an important role for prevention against rabies.

More than 99% of all human deaths from rabies occur in the developing world [2], and although effective and economical control measures are available [3,4] , rabies remains a neglected disease throughout most of these countries [5]. A major factor in the low level of political commitment to rabies control is a lack of accurate data on the true public health impact of the disease. It is widely recognized that the number of deaths officially reported greatly underestimates the true incidence of disease. Patients may not present to medical facilities for treatment of clinical disease; few cases receive laboratory confirmation; and clinical cases are often not reported by local authorities to central authorities [2, 4, 5]. These problems are not unique to rabies, and the recognized poor quality of much public health information from developing countries has prompted several investigations into the distribution of major infectious diseases and the mortality and morbidity attributable to them. Such

studies are based on estimates of occurrence extrapolated from more readily quantifiable determinants of disease, such as vector distribution or host immunity [6–8]. For rabies, a similar predictive approach has been used to estimate human deaths from rabies in the United Republic of Tanzania using a probability decision tree method to determine the likelihood of clinical rabies developing in a person bitten by a dog suspected to be rabid [5]. Dog bites are reported proportionately more frequently than human cases of rabies and may provide an accessible data source from which human deaths from rabies can be inferred.

MATERIAL AND METHODS

Study Design: A cross sectional study.

Study Period: February 2012 to May 2012.

Study Site: ARV clinic, SSG Hospital, Vadodara, Gujarat.

Study Population: We included 410 Animal bite victims who had attended ARV Clinic from February 2012 to May 2012 in the study. They were approached at ARV centre of SSG Hospital, Vadodara. The patients were interviewed using pretested semi structured questionnaire after taking their informed verbal consent. They were asked about their socio demographic details, history of animal bite, first aid care taken at home by them, treatment seeking pathway and also about their awareness about ARV at the first visit. The patients were categorised according to the WHO guidelines of management of animal bites.

Data Management and Analysis

Data was entered into MS Excel and Epi Info (version 1.1.67, developed by WHO CDC[8] and further analysis was carried out. Proportions were computed for easy interpretation of the data.

Ethical clearance

The study process didn't involve any harm to participants. Patients were enrolled after taking their informed verbal consent. The privacy of the patients was ensured during the entire process of data collection and confidentiality of the records was maintained.

RESULTS

Total 410 samples were included in my study. Table - 1 shows Socio-demographic profile of patients attending ARV clinic at SSG Hospital. Majority of the patients187 (45.6%) in the study were in the age group of more than 50 years. Children accounted for 70 (17%) and adolescents 61(14.9%) of the study population. Adults comprised of 92(22.4%) of enrolled patients in study. Majority of the patients were males 294 (71.7%). Almost 122 (29.8%) patients were educated up to primary (up to 5) level, while 86(21.7%) were educated up to secondary (9-10) school level. Considerable population 63 (15.4%) of the patients were illiterate.

Most of the patients 263 (64.1%) lived within 10 kilometers distance from ARV Clinic, while 118(28.9%) of the patients lived at a distance of 10-20 Kms from ARV Clinic and 29(7.1%) of the patients more than 20 km away from SSG Hospital, Vadodara.

Table 1: Socio-demographic profile of patients attending ARV clinic at SSG Hospital

Characteristic Feature	No	% (N=410)
Age Group (in years)		
0-5	22	5.4
6-9	48	11.7
10-19	61	14.9
20-49	92	22.4
≥50	187	45.6
Sex		
Male	294	71.7
Female	116	28.3
Educational Status		
Illiterate	63	15.4
Primary	122	29.8
High primary	66	16.1
Secondary	86	21.0
Higher Secondary	40	9.8
Graduate	30	7.3
Postgraduate	3	0.7
Economic status according to APL and BPL card		
APL	313	76.3
BPL	97	23.7
Residential distance in Kilometres		
<10 km	263	64.1
10-20 km	118	28.9
>20 km	29	7.1

Table 2: Clinical history profile of patients attending ARV Clinic of SSG Hospital

Characteristic Feature	No	% (N=410)
Type of Animal		
Street Dog	393	95.8%
Pet Dog	11	2.7%
Rat	3	0.8%
Cat	2	0.5%
Monkey	1	0.2%
Category of dog bite		
Category-1	56	13.8%
Category-2	344	83.8%
Category-3	10	2.4%
Local treatment before visiting the ARV clinic		
Lime	65	16%
Chilli	62	15.2%
Turmeric	16	3.8%
Water only	49	12%
Cleaning with soap and water	45	11%
Nothing	152	37%
Other	21	5%
Treatment seeking pathway of patients attending ARV Clinic		
Direct to ARV Clinic	25	6.2
Private clinic	288	70.2
Government Set up	97	23.6
Time of visit to ARV clinic after bite		
<24 hrs	328	80%
>24 hrs	82	20%

Table-2 shows the clinical history profile of all cases. In this study majority of the patients 393 (95.8%) were bitten by street dog, where as pet dogs were responsible for 11(2.7%) of the total bites, while rat, cat and monkey were responsible for less than 6(1.5%) of the total animal bite victims. Majority of the patients (83.8%) were classified as Category 2 according WHO classification of the severity of wounds. 13.8% of them had Category-1 wound while 2.4 % had Category-3 bites. More than one-thirds 147 (37.6%) of the patients had taken no action on being bit. Patients had applied lime 65 (16%), chilli 62 (15.2%), Turmeric 16 (3.8%) on wound site. Only 45(11%) of the patients had cleaned the wound site with soap and water, and 49 (12%) patients had cleaned it with plain water. 21 (5%) patients used the other materials & 152 (37%) visit the clinic without doing anything. About 93.8% (385) had approached other health facilities before coming to the ARV Clinic, like private clinic or other Government health facilities. Out of 410 patients, 328 patients had reported within 24 hours of dog bite to the ARV Clinic, while 82 (20.0%) reported to ARV Clinic after more than 24 hours of getting animal bite.

DISCUSSION

In our study, there were 45% patients above age of 50 years and 32% less than 20 years who were bit by animals. Studies by Renu Bedi et al[11], TR Behra et al [13] and Hanspal JS et al[14] have shown that more than half of the animal bite victims were children less than 10 years of age. Smaller height and lack of inhibition in children in provocating the animals may increase the probability of their being bitten more. Many children lack judgement about how to deal with a dog, and their inability to fend off an attack, may put them at additional risk [16] Children and adolescents do not recognize the angry or defensive behaviour of the dog and continue to play with them which the dogs may consider as the invasion of territory and may incite an attack [15].

In the present study more number of males were victims of dog bites probably because of their mobile nature than females. In our study, males and aged were targets of animal bites due to the possibility that males go out more on purpose of work; thereby have greater chances of being bit. This finding collaborates with other studies by TR Behera et al [13] and Hanspal et al [14] Sudarshan et al[18], Khokhar et al[19]

Education is an important factor in understanding of ARV schedule in terms of date of vaccination (reading ability), economic status (ability to pay for ARV charges) and also in perceiving necessity of regularity in scheduled dosage of ARV. The residential distance also adds to the travelling costs to the patients [15]. These findings have been highlighted in our study. Majority of the patients (64.1%) in the study lived at a distance within 10 kilometers from ARV Clinic, while 7.1% of the patients lived more than 20 km away from the hospital. Distance from the clinic also plays a role in the health seeking behaviour of patients [15] Lower socio-economic class, more distance from the health facilities indirectly leads to loss of one day wages in coming to take the health services. Hence, though ARV is available at low cost at VMC, people may not utilise it due to travelling distance. As a result there may be missing or delay of dosage. Thus ARV services should be available as near as possible to

the patients' home. ARV services; though available in rural areas, lack of adequate stock of ARV becomes a problem sometimes. Adding this component in primary health care services can hence improve the ARV coverage. Urban health care dispensaries are established in different areas of Municipal Corporation, but ARV services are only provided at one centre.

Dog as a major biting animal was found in the present study and other studies also agree with this finding [12-16, 22-23].

Study findings by Tiwari et al [15] & Modi et al [20] showed category 2 bites almost 60.47% and 85.94% of the study population respectively.

Almost one-thirds of the patients performed harmful local traditional practices and applied locally available irritants like chilli powder, lime paste and/or turmeric on the wound area. A common perception is that local irritability produced by these substances would destroy the rabies virus in the wound site. The present study and studies conducted by Khokhar et al [19] and TR Behara et al [13] found that washing the local wound with water and soap as a first aid treatment were practiced to a lesser extent. A similar type of observation was found in a study by D M Satapathy in Orissa [13] and study by U.S. Singh et al [21] in the rural community of Gujarat.

Although WHO guidelines 2008 have mentioned that post exposure prophylaxis should be started as early as possible after exposure to the potentially rabid animal, many patients (20%) reported to ARV Clinic after 24 hours of their exposure to the rabid animal.

Study by U.S. Singh et al [21] in the rural community of Gujarat also described that only 36.4% people would like to visit the doctor while 19.2% did some religious customs and 13.3% did nothing after being bit . Malini et al [22] observed that 62.0% of animal bites reported late after 24 hours of bite because the animal was alive, looking healthy and traceable and 12% cases did not regard the bite as so severe.

Of the enrolled patients 25% (125 out of 500) had approached to other health facility before coming to the ARV Clinic. Only 26.40% of them were treated by Injection T.T. and local dressing along with first dose of Anti-rabies Vaccine and then referred to the SSG Hospital/Jamnabai Hospital. 15.20% of these patients were not given any kind of the treatment and simply referred to the Government health facility. No information regarding washing of the wound, first aid or injections was administered to such patients. Similar findings were observed in study by U S Singh et al [21]. Proper choice of health facility; though not much in the patients' hands, is important. Training of the health care staff regarding first aid treatment of animal bites is essential. In some cases, the patients were referred from government health facility due to unavailability/shortage of ARV.

Reasons for missing doses were due to personal work or due date of vaccination coming on a holiday. Few of the patients missed doses as they did not realise the importance of completing the schedule due to minority of wound. Some of them forgot coming for vaccinations or had economic problems.

CONCLUSION

Animal bite is more common among adults, adolescents and males. Dogs were the main biting animal. The bite victims did not take proper measures for wound care or first aid and did not seek care from health facility after the bite. Indigenous treatment was quite prevalent. All these call for concerted effort for a mass awareness campaign.

REFERENCES

1. Sudarshan MK. Assessing burden of rabies in India. WHO sponsored national multi-centric rabies survey. Int J Infect Dis. 2007 Jan;11(1):29-35. Epub 2006 May 4.
2. World Health Organization. World Survey of Rabies No. 32 for the year 1996. Geneva: WHO 1998. WHO document EMC/ZDI/98.4.
3. Bögel K, Meslin F-X. Economics of human and canine rabies elimination: guidelines for programme orientation. Bulletin of the World Health Organization 1990;68:281-91.
4. Warrell DA, Warrell MJ. Human rabies: a continuing challenge in the tropical world. Schweizerische Medizinische Wochenschrift 1995;125:879-85.
5. Coleman PG. Estimating human rabies mortality in the United Republic of Tanzania from dog bite injuries. Bulletin of the World Health Organization 2002;80:304-10.
6. Cleaveland S, Fèvre EM, Kaare M, Fekadu M, Kitala P, Perry B et al. Human rabies surveillance and control in Ethiopia editors. Proceedings of the Fourth International Conference of the Southern and East African Rabies Group, Nairobi, Kenya, 4-6 March, 7-8. Lyon: Editions Fondation Mérieux 1997:78-9.
7. Bendix Carstensen, Martyn Plummer, Esa Laara, Michael Hills. Epi: A Package for Statistical

Analysis in Epidemiology. R package version 1.1.67. URL http://CRAN.R-project.org/ package =Epi
8. Snow RW, Craig M, Deichmann U, Marsh K. Estimating mortality, morbidity and disability due to malaria among Africa's non-pregnant population. Bulletin of the World Health Organization 1999;77:624-40.
9. Dye C, Scheele S, Dolin P, Pathania V, Raviglione MC. Global burden of tuberculosis — estimated incidence, prevalence, and mortality by country. JAMA 1999;282:677-86.
10. Centers for Disease Control and Prevention (CDC). Human rabies prevention—United States, Recommenda¬tions of the Advisory Committee on Immunization Practices (ACIP). MMWR 2008;57(3).
11. Bedi R,Bedi DK,Tankha ,ChoudharyV,Matoria RS,Profile of animal bite cases attending Anti Rabies Clinic of JLN Medical college & Hospital,Ajmer.APCRI Journal 2006;(1):28-30
12. World Health Organization.National Guidelines for Rabies Prophylaxis and Intra-dermal Administration of cell culture rabies vaccines 2007
13. Behera TR,Satapathy DM,Tripathy RM,Sahu A.Profile of animal bite cases attending the ARC of M.K.C.G. Medical College, Berhampur(Orissa). APCRI Journal 2008,9(2):20-5
14. Hanspal JS,Bhanderi D,Nagar S.A Review of Attendance of animal bite cases in the anti-rabies clinic of G.G.S. Hospital,Jamnagar (Gujarat) APCRI Journal:2009;11(1):24-6
15. Tiwari R,Marathe N,Srivastava D.A retrospective analysis of the patients attending anti-rabies clinic at J.A. Group of hospitals,Gwaliar. APCRI Journal ;2009:11(1):24-6
16. Bariya B,Shringarpure K.Compliance of animal bite patients Managed by Intramuscular Route of Anti-Rabies Vaccination RRJoI.2014;4(2):1-7
17. Jeffrey J Sacks,Marcle jo Kresnow,Barbara Houston. Dog bite:how big a problem? injury prevention,1996;2:52-4
18. Sudarshan MK,Mhendra BJ,Narayan DH.A Community Survey of dog bites,anti-rabies treatment,rabies & dog population managment in Bangalore city. J Commun Dis; 2001:33(4):245-51.
19. Khokhar A,Meena GS,Mehra M.profile of dog bite cases attending M.C.D Dispensary at Alipur, Delhi. Indian Journal of Community Medicine 2003;28(4):157-9
20. Modi BK.A review of attendance trend of animal bite cases in the private antirabies clinic,at kukarwada town in North Gujarat. APCRI Journal 2009;10(2):27-8
21. Sing US,Choudhary SK. Knowledge, Attitude, Behaviour and practice Study on Dog Bite and Its Management in The context of prevention of rabies in rural community of gujarat. Indian Journal of Comumunity Medicine 2005;3(30):81-3
22. Malini S,Satapathy DM,Tripathy RM.An analysis on late reporting of animal bite victims to the ARC of MKCG Medical College, Behrampur. APCRI Jouranal:2010;12(1):33-6
23. Mohanti M,Giri PP,Sahu M,Mishra K,Mohapatra B.A study on the profile of animal bite cases attending the anti-rabies vaccination OPD in SCB Medical college and Hospital, Cuttack, Orissa. APCRI Journal 2009;10(2):22-4.

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