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Epidemiological Study of Dog Bite Victims in Anti Rabies Clinic of A Tertiary Care Hospital.

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ABSTRACT

Dog attacks, by street or domestic dogs, with injuries from very minor to significant and severe to fatal, are not uncommon. Attacks on the serious end of the spectrum have become the focus of increasing media and public attention. To study the epidemiological characteristics of dog bite injuries and the knowledge, attitude & practices of the subjects regarding dog bite. A cross-sectional study of 422 dog bite victims reported at ARV Clinic of NKPSIMS&RC, Nagpur for medical advice and post exposure immunization against rabies during past one year has been done. Statistical analysis was done by Epi Info software. 422 victims of dog bite comprised of 75.8% males, 31.5 % in 21 - 30 years age-group and 73.93% class III exposures victims and unprovoked bite in majority of victims. Extremities were involved in 89.33% victims. 80.8% were bitten by a stray dog. Only 52.1% of the victims reported for treatment within 24 hours. Wisely developed intervention model, based on epidemiological triad, for causation of rabies shall be quite helpful in prevention and control of the rabies victims.

Keywords: Dog bite, Provoked, Rabies.

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INTRODUCTION

According to WHO report, ten million people are bitten by animals (especially Dogs) around the world, considered for prophylaxis and treatment against rabies and almost (55,000) people die from this disease annually [1]. Canine rabies continues to exist in 87 countries or territories of the world and these accounts for 99 % of all human rabies victims [2]. Dog attacks, by street or domestic dogs, with injuries from very minor to significant and severe to fatal, are not uncommon. Attacks on the serious end of the spectrum have become the focus of increasing media and public attention.

Although victims of dog bite constitute a problem of considerable magnitude, not all the victims of a dog bite seek medical help. Unquestionably the level of knowledge of the community and concern about dog bite injuries has an important role to play in dealing with this problem [3]. There is no accurate available data regarding the magnitude of dog-bite. Similarly, to the best of our knowledge, there were very few studies on the knowledge, attitudes and practice (KAP) related to dog-bite in the area, hence the study was conducted to evaluate the knowledge and analyze the data regarding dog bite victims.

Objectives

- To study the epidemiological characteristics of dog bite injuries.
- To study the knowledge, attitude & practices of the subjects regarding dog bite.

MATERIAL AND METHOD

The study was conducted in NKP Salve Medical College a tertiary care hospital of Nagpur, between 1st Jan. to 31st Dec. 2013. Total 422 dog bite victims reported for medical advice and post exposure immunization against rabies during one year period and all of them were included for the study. A pretested and structured oral questionnaire was used to elicit the required information pertaining to the epidemiology of dog bite and knowledge attitude and practice of persons regarding dog bite.

Classification of exposures was done as per guidelines given by World Health Organization (WHO). A bite was considered as provoked, if it resulted from subject initiating interaction with the dog such as playing with the dog or annoying the dog during his meal. Analysis was done by Epi Info software.

RESULTS

A total of 422 victims of Dog bite reported at the ARV clinic during the study period. Males constituted 320 (75.8%), whereas, females were 102 (24.2%) of the total victims. The male female ratio was 3.13:1. Majority of the victims 133 (31.5%) were in the age group of 21 -30 years. whereas age group of 0 -20 years accounted 127 (30.1%) victims, 31 -50 year age group accounted for 108 (25.6%) victims and above 50 years accounted for 54 (12.8%) victims.

Majority of the victims 312 (73.9%) were of category III, there were 110 (26.1%) victims of category II but no victims has been reported in category I.

Most common site of bite was the Extremities, which accounted for 377 (89.3%) victims.

Unprovoked bites were seen in majority of the victims 340 (80.6%) whereas provoked bites were seen in only 82 (19.4%) victims.

Majority of the victims were due to street dogs 341 (80.8%), Pet dog accounted for only 81(19.2%) victims.

Maximum, 103(24.4%) of the bites occurred in the month of May-June followed by July-August 81(19.2%). Least number of victims 52(12.3%) were reported during November.-December.

Majority of the victims has reported within 24 hours of the bite 220 (52.1%).

197 (46.7%) victims did no management before coming to ARV Clinic. In home management majority have applied chili paste 165 (39.1%), a very few victims used water and soap for cleaning the wound 16 (3.8%).

Majority of the victim thought that the person goes mad 241 (57.1%), only 82 (19.4%) knew that a person could die due to dog bite.

Table 1: Sex and Age wise distribution of study subjects

Age (in years)	Male	female	Total	Percentage %
≤ 10	37	18	55	13
11-20	52	20	72	17.1
21-30	102	31	133	31.5
31-40	53	7	60	102.2
41-50	37	11	48	11.4
51-60	29	09	38	9.0
≥ 61	10	6	16	3.8
Total	320	102	422	100

Table 2: Classification of exposure

Category	No.	Percentage %
I	00	00
II	110	26.1
III	312	73.9

Table 3: Distribution according to the site of bite.

Site of bite	No.	Percentage %
Extremities	377	89.3
Trunk	28	6.7
Face	17	4.0

Table 4: Distribution according to the provocation

Provocation	No.	Percentage %
Yes	82	19.4%
No	340	80.6%

Table 5: Distribution according to the Ownership of dog

Ownership of dog	No.	Percentage %
Stray dog	341	80.8%
Pet dog	81	19.2%

Table 6: Month wise distribution of victims

Month	No.	Percentage %
Jan – Feb	61	102.5
Mar – Apr	59	102
May – Jun	103	24.4
Jul –Aug	81	19.2
Sep – Oct	66	15.6
Nov – Dec	52	12.3

Table 7: Time of reporting to ARV clinic after dog bite

Time (hours)	No.	Percentage %
<24	220	52.1
24 – 48	1022	33.7
>48	60	102.2

Table 8: Home Management of wound before coming to ARV clinic

Home management	No	Percentage %
No home management	197	46.7
Applied chili paste	165	39.1
Washed with water	44	10.4
Washed with water and soap	16	3.8

Table 9: Knowledge about consequences of dog bite

Response	No.	Percentage %
Victim goes mad	241	57.1
Victim dies	82	19.4
Convulsions	32	7.6
Do not know	67	15.9

DISCUSSION

Rabies is a deadly disease with no cure which is mainly caused by dog bites [4]. Majority of victims are male [3,6,9,10,13,14,15] and in this study also we found that 75.8% victims were male, explanation of which lies in the fact that men are more likely to go out of their home for work as compared to women. In most studies it is seen that children are the most frequent victim of dog bite [1,2,3,5,9,10], contrary to this we found that majority of the victims 133 (31.5%) were in the age group of 21 to 30 years. This may be attributed to the fact that study area is an educational hub, having many colleges and hostels. Unprovoked (80.6%), category III (73.9%) bites by stray dogs (80.8%) accounted for most of the injuries [2,3,4,11,12,14,15]. Higher incidence of dog bite during the summer month have been found in this study, similar findings have been found in studies by other authors [3,4,7,12]. Most common site involved in dog bite victims was found to be extremities (89.3%), which is in accordance with findings of other studies.[2,3,9,10,11]. Maximum victim reported to ARV Clinic within 24 hours of dog bite [2,6,9,12] Only small number of victims (3.8%) have taken proper wound care

(washing with water and soap) as compared to large number of victims (96.2%) who had taken either no management or improper management for wound care. [2,3,4,5,12,14,15] Only (19.4%) victims were aware that dog bite can be fatal, whereas large number of victims thought dog bite causes madness [3,4,14].

CONCLUSION

Unlike the studies published earlier, this study highlights the importance of region wise epidemiological studies looking into the in-depth analysis of the geo-social distribution of population, stray dog population, facility survey, information dissemination, behavioral practices, seasonal variations, observed trends and consolidated concurrent strategic inputs of all interventionists in the field of administration, health care, municipal institutions, social media, educational & social welfare bodies and beneficiaries themselves. Such concerted efforts shall go a long way in gaining long lasting impact on curbing the menace of dog bite & associated illnesses among people bitten and relieving the anxieties among their family members.

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