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Original Research Article

Profile of animal bite victims reporting to intradermal rabies vaccination centre at a tertiary care government hospital: 10 years experience

Harish B. Rudresh, Bharath Jagadeesh*, Jahnavi Rajgopal

Department of Community Medicine, Mandya Institute of Medical Sciences, Mandya, Karnataka, India

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***Correspondence:**
Dr. Bharath Jagadeesh,
E-mail: bharathlakshmisagara@gmail.com

ABSTRACT

Background: Rabies is acute, progressive encephalitis caused by a lyssavirus. Over 95% of rabies deaths in humans result from virus transmission through the bites of infected dogs. To provide Post Exposure Prophylaxis to the people, Anti Rabies Clinics have been established in many places, especially at tertiary care centres. The Anti-Rabies Clinic at Mandya Institute of Medical Sciences, Mandya, Karnataka state (ARC-MIMS) is one such centre, the first of its kind in Karnataka state more than ten years ago. We are presenting the clinical profile of the animal bite victims who sought treatment at our centre in the past 10 years.
Methods: It was a retrospective record based study conducted at Mandya Institute of Medical Sciences with sample size of 44087 using purposive sampling from May 2018 to June 2018 and data was collected using data extraction sheet.
Results: Among the 44087 animal bite victims majority i.e., 66.6% were males, most of them were in the age group of 16-60 years. Sixty percent of the animal bite victims were residing in rural areas. All the category 2 and category 3 bite victims were administered anti rabies vaccination and 15.4% of the category 3 bite victims were administered rabies immunoglobulin.
Conclusions: Majority of animal bite victims were presented and treated within 1 day. The practice of giving health education periodically to the school children and making phone calls to remind follow up days which is being practiced should be promoted.

Keywords: Rabies, Anti rabies clinic, Experience, Animal bite, Government

INTRODUCTION

Rabies is acute, progressive encephalitis caused by a lyssavirus that is considered always fatal. A suspected clinical case of rabies in humans is defined as: an acute neurological syndrome (i.e. encephalitis) dominated by forms of hyperactivity (furious rabies) or paralytic syndromes (paralytic rabies) progressing towards coma and death, usually by cardiac or respiratory failure, typically within 7–10 days of the first signs if no intensive care is instituted.[1]

The number of human deaths globally due to dog-mediated rabies is estimated to be 59,000 annually with an associated loss of 3.7 million DALYs (Disability adjusted life year). The majority of deaths are estimated to have occurred in Asia (59.6%) and Africa (36.4%) and most DALYs were due to premature death (>99%). An estimated 35,172 human deaths (59.6% of global deaths)

and loss of approximately 2.2 million DALYs occur per year in Asia due to dog-mediated rabies. India accounts for the most deaths in Asia (59.9% of human rabies deaths) and globally (35% of human rabies deaths).[2]

Over 95% of rabies deaths in humans result from virus transmission through the bites of infected dogs. Timely and correct post exposure prophylaxis which includes proper wound toilet i.e., immediate, thorough flushing and washing of all wounds with soap and water and application of povidone iodine or another substance with virucidal activity. If soap or a virucidal agent is not available, the wound(s) should be thoroughly and extensively washed with water and anti rabies vaccine should be administered. A bleeding wound at any site indicates potentially severe exposure and should be infiltrated with either equine or human RIG along with vaccination for prevention of rabies.[1]

WHO has made a target to eliminate the disease by 2020 in endemic South East Asian countries including India.[3] In India about 17 million animal bites occur each year and a similar number of PEP is required.[4] To provide PEP to the people, anti Rabies Clinics have been established in many places, especially at tertiary care centres. The anti-rabies clinic at Mandya Institute of Medical Sciences, Mandya, Karnataka state (ARC-MIMS) is one such centre, the first of its kind in Karnataka state more than ten years ago. We are presenting the clinical profile of the animal bite victims who sought treatment at our centre in the past 10 years in this study.

Objectives

- To describe the profile of animal bite victims who reported to ARC-MIMS from the past 10 years.
- To assess the compliance of intradermal rabies vaccine.

METHODS

It was a retrospective record based study carried out in Mandya Institute of Medical Sciences (MIMS), Mandya among animal bite victims with a sample size of 44087 using purposive sampling technique. The medical records were accessed to collect the data from Sept 2007 to Sept 2017 (for a period of 10 years). Data was collected using data extraction sheet all categories of animal bite victims who reported to ARC, MIMS, Mandya from Sept 2007 to Sept 2017 were involved and Animal bite victim records with incomplete data were excluded. Data collected was entered in MS-Excel and analyzed using Epi-info software. Descriptive statistical measures like percentage, mean, and standard deviations were used.

RESULTS

Among the 44087 animal bite victims majority i.e., 66.6% were males, most of them were in the age group of 16-60 years and majority i.e., 47.8% of them belonged to class III socio economic status as per modified B G Prasad classification (Table 1).

Table 1: Socio-demographic profile and details of animal bite (n=44087).

	Frequency	Percentage (%)
Distribution of animal bite victims according to gender		
Female	14733	33.4
Male	29354	66.6
Distribution of animal bite victims according to age group (in years)		
0-15	14936	33.9
16-60	26200	59.4
>60	2951	6.7
Distribution of animal bite victims according to socio economic status as per modified B G Prasad classification		
Class I	176	0.4
Class II	1808	4.1
Class III	21074	47.8
Class IV	16533	37.5
Class V	4497	10.2
Distribution of animal bite victims according to place of residence		
Urban	17326	39.3
Rural	26761	60.7
Distribution of animal bite victims according to type of animal		
Dog	42481	96.3
Other domestic animals	1446	3.2
Wild animals	160	0.4
Distribution of animal bite victims according to type of animal bite		
Pet	26981	61.2
Stray	17106	38.8
Distribution of animal bite victims according to circumstance of animal bite		
Provoked	32668	74.1
Unprovoked	11419	25.9
Distribution of animal bite victims according to time between bite and initiation of treatment (in days)		
<1	36195	82.1
1-7	7186	16.3
>7	706	1.6

Sixty percent of the animal bite victims were residing in rural areas. Dogs especially pet dogs were responsible for 96.3% of the animal bites and most of these bites were provoked (Table 1).

For most of the animal bite victim's time between bite and initiation of treatment was less than 1 day (Table 1). Majority i.e., 65.6% of the animal bite victims had category 3 exposure (Figure 1).

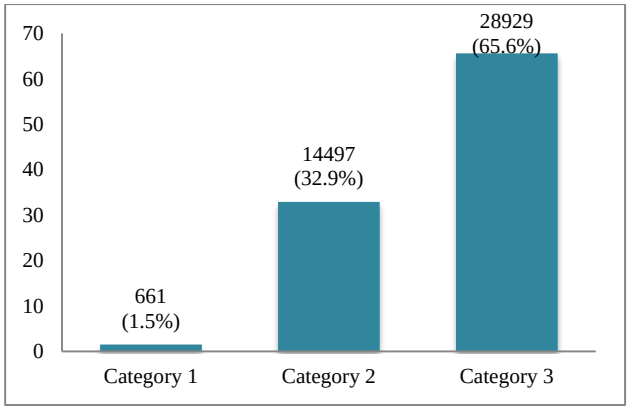

Figure 1: Distribution of animal bite victims according to category of bite (n=44087).

Among animal bite victims 8.8% of animal bite victims had applied some form of irritant to the wound. All the category 2 & category 3 bite victims were administered anti rabies vaccination and 15.4% of the category 3 bite victims were administered rabies immunoglobulin.

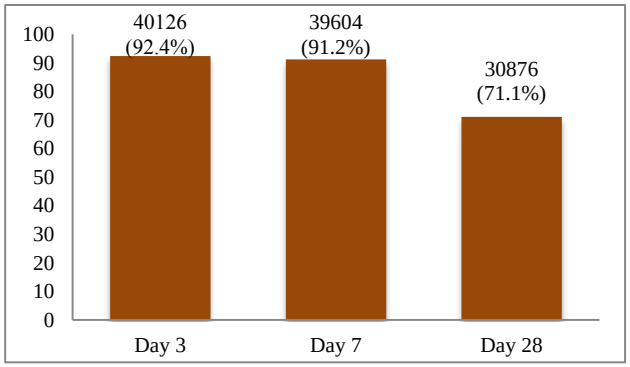

Figure 2: Compliance to anti rabies vaccination (n=43426).

Based on the current practice of following updated Thai Red Cross Regimen (2-2-2-0-2), Figure 2 shows the compliance to the 2,3 and 4th dose of anti rabies vaccination. Compliance for the last doses on 28th day was 71.1%.

DISCUSSION

In the present study most of the animal bite victims were males i.e., 66% which is similar to study conducted by Indu et al, where they have observed that (57.7%) of the animal bite victims were men.[5] and also in study conducted by Behera et al where they have observed 69.9% of the animal bite victims were men.[6] This could be due to adult males are more exposed to canines as they are involved in outdoor activities for various reasons.

In present study it was found that highest number of bites occurred in age group 16 to 60 years followed by age group 0 to 15 years. Lowest number of bite occurred in age group >60 years, which are similar to the finding in a study conducted by Bhise in Aurangabad.[7] These findings reflect that, working population and school children are most vulnerable age groups for animal bite. This may be due to fact that adults in this age group have to go outside for work and school children being mischievous may try to play or provoke animals, inviting the bite.

In present study there were 39.3% of animal bite victims from urban area while 60.7% were from rural area which is similar to studies conducted by Masoodi et al, Rambhau et al, Wankhede et al where they have observed that about 58% to 62% of animal bite cases were from rural areas.[8-10] This may be due to the fact that the majority of the animal bite victims will be referred to tertiary center for RIG administration, which may not be available in the primary health centers especially in the rural areas.

In the present study 61.2% of animal bites were from pet animals and remaining i.e., 38.8% were from stray animals. These findings are similar to the studies conducted by Sharma et al where it is reported that 61.64% cases were bitten by pet dogs and remaining 38.36% by stray dogs.[11]

In present study, majority of animal bite victims had suffered from category-3 exposure i.e. 65.6%, followed by category-2 i.e. 32.9% and only 1.5% had category-1 exposure. These findings are similar to the studies conducted by Bhise et al, Rambhau et al, Wankhede et al where majority of the animal bite victims suffered from category-3 exposure.[4,6,7]

In present study it was observed that more than 82.1% of the animal bite victims were reported to the hospital and treatment was initiated within 24 hours of exposure, the findings were similar to study conducted by Bhise et al where 75% of the animal bite victims were reported to the hospital within 24 hours.[4] This shows the increasing awareness in recent times among the people regarding treatment options availability for animal bites.

In the present study compliance to the last doses on 28th day was 71.1%, which is higher compared to the study conducted by Desaiah et al in Solapur where it was 41.60%.[12] Increase in compliance in the present study may be due to efforts put over the years on educating the people, school children in the study area and also may be due to usage of telephonic call reminder practice where telephone call will be made one day before their scheduled date for the vaccination.

CONCLUSION

Most of the animal bite victims were in productive age group and majority were males. Among animal bite victims reported to ARC-MIMS, dog bites were common. Majority of animal bite victims were presented and treated within 1 day. The practice of giving health education periodically to the school children regarding

prevention of rabies and making phone calls to remind follow up days which is being practiced should be promoted.

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