SPECIAL ARTICLE

A study on primary wound management of dog bite injuries presenting to a teaching hospital in Andhrapradesh

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ABSTRACT

Background: Rabies is a highly preventable zoonotic disease which is other wise having 100% mortality.Objectives:1.To study the socio-demographic profile of patients with dog bite injuries attending tertiary care hospital 2. To know the type of injuries among study population 3. To study the primary management of wounds due to dog bites among the study population. Methodology: A cross-sectional study was conducted on 267 patients with dog bites attending ARV Clinic at Government General Hospital, Srikakulam from August to October 2019.Results:Among the study subjects(n=267), 66.6% were males, 33.3% were females; 40% belong to <15 years age; 40.11% of participants washed their wound with water; 59.88% washed with soap & water, proper wound management was observed in 3.4% only; Conclusion: Still 18.3% of patients didn't manage the wound appropriately before visiting the hospital and nearly 41.1% of patients are approaching non-medical treatment. Hence wide publicity and health education should be envisaged.

KEYWORDS: Dog bite, Rabies, Anti Rabies Vaccination, Wound washing

INTRODUCTION:

India alone contributes to 36% of global mortality due to rabies. Proper wound management due to animal bites can effectively reduce the rabies viral load by 80%1. Srikakulam is one of the districts of Andhra Pradesh with a high incidence of dog bites. Awareness and knowledge about the management of common injuries caused by animals is inadequate. Wrong practices and myths associated with these injuries have also been reported among the victims of dog bites. Antirabies treatment, namely poste xposure prophylaxis, is a lifesaving treatment in a definite rabid dogbite when given timely and appropriately given. Hence, this study is conducted with the following objectives.

OBJECTIVES:

1.To study the socio-demographic profile of patients with dog bite injury attending a tertiary care hospital.

2. To know the type of injuries among the study population.

3. To study the primary wound management among the study population

MATERIALS AND METHODS

A cross-sectional study was conducted on 267 victims of dog bite injuries from 25th August to 25th October 2019attending ARV Clinic & Emergency department of Government General Hospital, Srikakulam. Pre tested semi structured questionnaire was administered to study participants. Study variables include age, gender, site of injury, type of injury, wound management etc.. Data analysis was done using Microsoft Excel and relevant statistical tests were applied.

RESULTS

A total of 267 victims of dog bite injuries were included in the study. The age group of the study population range from 1 to 80

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years, with a mean age of 28 years (figure:1). Males were 66.6% and females were 33.3%.Children, less than 15 years were 40%. Males were more commonly affected than females in all age groups and majority (47.5%) of them were <20 years of age.

Nearly 2/3rd of study participants (61%) belong to the Upper lower class according to Modified Kuppuswamy Socioeconomic status classification 2019.

Majority of injuries were unprovoked (87%) and 13% injuries were provoked. Maximum number of injuries (82%) were caused by unvaccinated pet dogs or street dogs and 18% injuries were caused by vaccinated dogs. Majority(80%) of cases came to the hospital within 24 hours,12% cases came between 24 to 48 hours, and the rest 8% cases came beyond 48 hours after the dog bite injury.

The majority of injuries were Class II (63%), followed by Class III injuries(37%). Common site of injury involved was the lower limb(57%) followed by upper limb(33.7%), back in 3.7%, abdomenand the trunk in 3%, injuries involved head and face was 3% (Figure:2).

Previous history of dog/animal bites was present in 22.8% of cases.

Proper wound management with soap and water before coming to the hospital was done by only 3.4% individuals. Majority (80%) of victims of dog bite injury had improper wound management and 41.1% followed cultural method of wound management. Of which turmeric (69.9%) was most commonly used followed by calotropis 9% and a combination of both 5% ,bitter guard 8%, ash 3%, aftershave lotion 3%, and match stick powder 1%; It was observed that practicing cultural methods was more (50.8%) among participants with a previous history of dog bite and also with unvaccinated dog bites (40.85%). (Table:2).

Nearly 18.3% had no wound management before coming to the hospital.

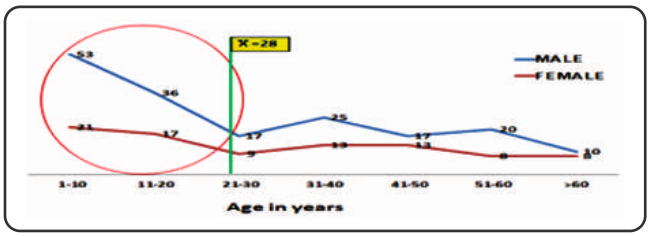

Fig: 1 Distribution of The Study Population according to AGE and Gender

Table: 1 Distribution of dog bites according to WHO category and Type of injury

Type of Injury	WHO Cat-I	WHO Cat-II	WHO Cat-III	Total
Licks	2	0	0	2
Scratches	0	168	0	168
Bites	0	0	79	79
Lacerations	0	0	18	8
Total	2	168	97	257

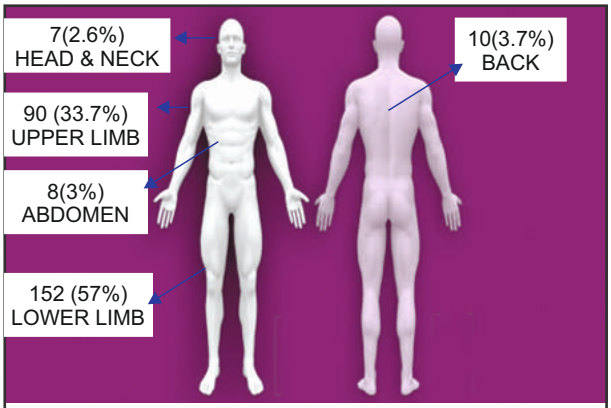

Fig: 2 Distribution of study population according to the site and type of injury

TABLE: 2 Showing Distribution of study population according to Previous history of dog bite & Vaccination status of dog.

	Previous H/O dog bite	No previous H/o dog bite	Vaccinated dog	Un vaccinated/ Street dog
Proper Wound Management	1 (1.6%)	8 (3.8%) P<0.05	0 (0%)	9 (4.1%)
Incorrect Wound Management	18 (29.5%)	81 (39.3%)	19 (38.7%)	80 (36.7%)
Cultural Management	31 (50.8%)	79 (30.6%)	21 (42.8%)	89 (40.85%)
Wound Management not done	11 (18.1%)	38 (18.4%)	9 (18.55)	40 (18.4%)
Total	61 (100%)	206 (100%)	49 (100%)	218 (100%)

Table :3 Showing Distribution of cases according to Compliance to ARV and Primary Wound Management

Compliance to ARV	Wound Management done	Wound Management not don	Total
YES	188 (86.2%)	38 (77.5%)	226 (84.7%)
NO	30 (13.8%)	11 (22.55)	41 (15.3%)
Total	218 (100%)	49 (100%)	267 (100%)

DISCUSSION:

Children are the most frequent victims of dog bites. In this study 40% of the cases were children <15 years of age. Jain, et al. also reported that 52.8% cases were children <15 years of age. In this study, about 67% of the cases were males due to more exposure of males to the outdoor than women, similar to Jain, et al.2

In this study we observed that limbs (upper and lower) were the most commonly involved (88%). Nimale et al. have also reported the same3. In this study, a maximum (82%) of the subjects were bitten by street dogs and unvaccinated pet dogs.

In this study we observed that Class II bites (63.%) injuries were more common which was similarly observed in Jain, et al. Before coming to the hospital, as many as 78.3% had applied cultural methods like turmeric, calotropis, bitter guard, ash, aftershave lotion, and matchstick powder on the wound, in Jain, et al 80% of the cases had applied chillipaste, whereas, in Patiala, 31.55% of the cases had applied chili paste4. This difference could be due to various cultural practices in different regions.

CONCLUSION AND RECOMMENDATIONS

In our study, young children are the more common victims. Therefore anticipatory guidance by the parents and the teachers is needed.

In this study, gaps in the wound management practices were observed. Myths and misconceptions on primary wound management still exist. Proper primary management of the wound right after a dog bite was highly lacking in the subjects.

Awareness and knowledge about proper wound management of dog bite injuries should be created among general population.

Majority of the injuries were due to unvaccinated dogs and hence an increased effort to encourage owners to properly contain their dogs and vaccination of the dogs should be implemented.

IEC on wound management, treatment, anti Rabies vaccine and vaccination of dogs should be increased.

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