Original Article

A Cross-Sectional Study of Animal Bites reported to District Hospital, Karimnagar

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ABSTRACT

Background and Aim: Rabies is an endemic, highly fatal disease in more than 150 countries. 18 to 20 thousand deaths occur annually in India due to Rabies. The aim of study was to describing the socio demographic profile of animal bites reporting to the Karimnagar District Hospital.

Materials and Methods: A cross-sectional retrospective record-based study was done from June 2018 to September 2018, at Government District Hospital, Karimnagar, for all the animal bites that were registered during the previous year (2017). For the same period, the records of all the animals that were vaccinated at the District veterinary hospital were studied. The data was entered and analyzed by SPSS v16.0.

Results: A total 2349 animal bites were registered. The mean age of victims of animal bites was 31.82 years (SD ±19.82). 65% of the bites reported were in males where as 35% were in females. Dog bites were highest that is 88% and 6.4% of the bites were reported by monkey bites. An average of6.43 cases were registered per day. In the concurrent period, a total of 945 animals were vaccinated at Veterinary Government Hospital of which 99% of the vaccinated animals were dogs.

Conclusion: The burden of animal bites is high in Karimnagar, most cases being dog bites. Rate of vaccination of pets and domestic animals are low.

Keywords: Animal bites, rabies, dog bite, monkey bite

INTRODUCTION

Rabies is not a new disease. It has been mentioned in Vedas as rabhas, meaning violence.[1] It is one of the major neglected tropical disease with hundred percent mortality rate. Every year almost 59,000 people are killed by this deadly disease and a majority of these cases are reported in Asia and Africa.

Rabies is highly fatal disease which is prevalent in 150 countries and it is vaccine preventable disease.[2] Some researchers report that in Asia, 3 billion people are affected by a rabid dog bite, which has led to 30,000 deaths every year implying thatone person is dying every 9 minutes due to Rabies.[3] India reports around 18,000 to 20,000 rabies cases and accounts for 36% of global rabies deaths. [4]

In India, dog bites are responsible for the transmission of Rabies in a range from 69.5% - 97.1% of cases.[5, 6, 7] It has been noted in India especially that rabid dogs often go on a biting spree and bite many people at the same time.

Past rabies elimination strategies included the reduction of population density of dogs through culling, based on the rationale that rabies transmission is density-

dependent with disease density increasing proportional to host density. However, studies have shown that culling is an ineffective means of elimination and mass vaccination is most efficacious to reduce disease incidence in all species. [2]

Global conference on the elimination of dog-mediated human rabies (Geneva, 10-11 December 2015) concluded that effective animal health and public health systems are required to eliminate dogmediated human rabies. These systems must be strengthened and resourced appropriately, and gaps identified and filled. Ensuring safe, efficacious and accessible dog and human vaccines and immunoglobulins, and promoting and implementing mass dog vaccination is the most cost-effective intervention to achieve dog-mediated human rabies elimination. [8]

Although a lot of research on rabies is done in India, there remains a huge gap between research and the implementation of the Rabies elimination policies. [9] Government of India has taken serious policy decision to control this dreaded disease and has launched National Rabies Control Program in 2014. [10,11] Association for Prevention and Control of Rabies in India (APCRI) has also pledged its support to achieve the goal of rabies free India by 2030. [12]

The current study is a step towards estimating the burden of animal bites reported at the Government District Hospital, Karimnagar, with the objective of studying the profile of various animal bite cases reported to the hospital for the year 2017-18.

MATERIALS AND METHODS

A retrospective observational study was carried from June 2018 to September 2018 at Karimnagar district hospital. Permission was obtained from the Institutional ethics committee of Chalmeda Ananda Rao Institute of Medical Sciences, the offices of the superintendents of District Hospital and Government Veterinary Hospital, Karimnagar. The registers with information oncases of animal bites for the year 2017 were accessed from the district hospital andthe data from the Government Veterinary hospital regarding vaccination of animals during the same period that is for the year 2017 is taken. All the data was analyzed in SPSS v16.0.

Inclusion Criteria:

- All the records from January 2017 to December 2017 with complete data were included in the study.

Exclusion Criteria:

- Records with incomplete data were excluded from the study.

RESULTS

A total of 2349 case have been registered from 2017 to 2018. Majority of the bites were reported in men 65% (1535) women 35% (814). The mean age of the bite victimsis 31.82±19.82.

People of younger ages were affected the most amongst the study Population. 19% (443) of animal bites were seen in up to 10 years of age and 15% (353) were seen in 11 to 20 years age group.

Table 1: Type of Animal Bite Vs Sex distribution of the study population

Animal Bite	Male	Female	Total	Percentage
Dog	1395	676	2071	88%
Monkey	65	86	151	6.4%
Cat	16	10	26	1.1%
Pig	19	12	31	1.3%
Rat	40	29	69	2.9%
Rabbit	0	1	1	0.3%
Total	1535	814	2349	100%
Percentage	65%	35%	100%	-

Among all the animal bites, dog bites were the most frequently registered (88%) followed by monkey bites (6%). Incidence of animal bites reported to District Hospital, Karimnagar was 5.6 for dog bites on an average day and 6.4 animal bites per day in total.

65% of all animal bites registered were in male participants while 35% were in female participants. There were 4.2 animal bites in males on an average per day and 2.2 animal bites in females per day. Study of specific animal bites showed that Males were more prone to dog bites (67.4% of all dog bites) while females were more prone to monkey bites (57% of all monkey bites). Incidence of animal bites that reported to District Hospital, Karimnagar approximately calculated is 8.9 per 1000 population.

Bites were evenly distributed throughout the year most of the bites were seen in the month of February (10%) and March (11%). Dog bites were observed to bereported through out the year, majority of them being reported during February to March and July to September. Whereas, monkey bites were more frequent in the months of June and July, compared to the rest of the year.

All the victims of animal bites received TT injection and wounds were graded according to WHO and post exposure prophylaxis was administered by intra-dermal regimen.

A concurrent record-based study of the animal vaccination done during the same period at the Government Veterinary Hospital showed that a total of 945 animals were vaccinated during the year 2017, of which dogs were 99% (937) and cats were 1% (8). Among the vaccinated animals most of them (24%) were vaccinated during July in a free camp for animal vaccination.

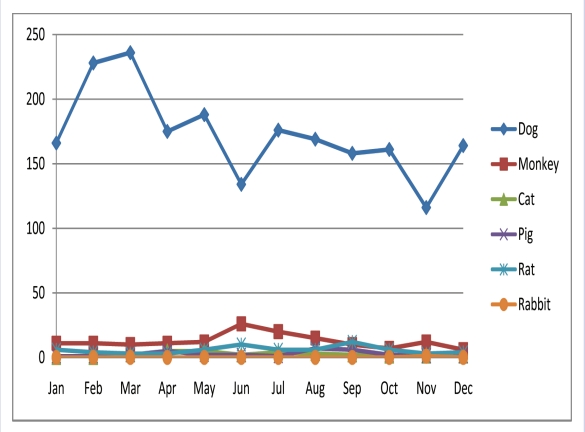

Figure 1: Animal bite in the Year 2017

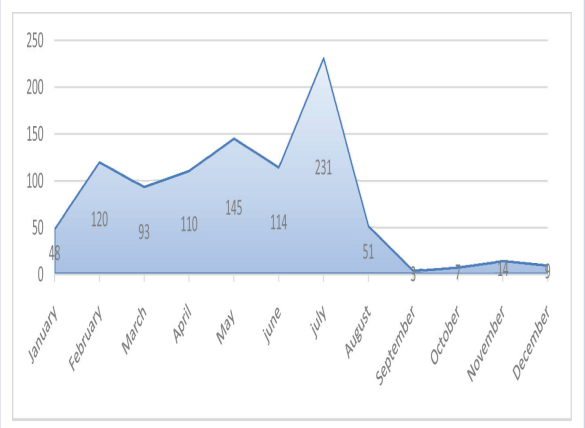

Figure 2: Month wise vaccination status of animals at veterinary hospital

DISCUSSION

In this present study, incidence of animal bites was 5.6 for dog bites on an average per day and 6.4 animal bites per day in total. There were 4.2 animal bites in males on an average per day and 2.2 animal bites in females per day. Incidence of animal bites that reported to District Hospital, Karimnagar approximately calculated is 8.9 per 1000 population. This is much less than the national incidence of 17 per 1000 population. The reason could be attributed to the fact that most severe forms of animal bites are referred to Hyderabad, due to its proximity to Karimnagar.

Most of the animal bites were reported in males (65%) in the current study. Similar findings were reported by N Y Dhupdale et al [13] in their study, of all the animal bites cases reported, 71.9% were in males and 28.1% were in female.

The mean age of the current study population was 31.82±19.82 years; which was similar to the study carried by N Y Dhupdale et al [13] where the mean age was 35.96±15.94 years.

In the present study, 88% of the animal bites were by dogs which is similar to the findings reported by WHO. [2] Other Indian studies showed a similar profile with dog bites being reported as 84.4% by N Y Dhupdale et al, [13] 94% by P Umarigar et al [14] and 95.8% Marathe N et al. [15] The reason for such high reporting of dog bites could be the awareness in the community that vaccination is necessary for dog bites.

In the present study, two peaks of dog bites were observed in a year- one during February - March and the other during July-August. This could be due to the period coincidingwith the dogs' breeding season -when the dogs are easily provoked and mother dogs are defensive of their pups. Similar reporting was made by the study carried by N Y Dhupdale et al. [13]

WHO has stressed and highlighted to vaccinate animals against rabies as most effective way to reduce the death toll.[16] A rather low vaccination rate of animals was observed in the present study (a total of 945 animals only were vaccinated all around the year). More animals were vaccinated in the month of July, when a free drive for vaccination of pets was held. This can be attributable to the lack of awareness and a tendency to not prioritize animal (pets & domestic) vaccination among general Public routinely and the lack of strict legislation for licensing of pet owners. Lack of strict legislation regarding Responsible dog ownership including compulsory vaccination of pet dogs is clearly reflected in the above low rates of dog vaccination.

Limitation of the study

Since, it is record based study using the available records, the registers used for the capture of data are primarily not designed for the collection of data for research purposes. Details like vaccination status of biting animal, whether it was a domestic pet or stray or wild animal, the place of bite, whether the bite was provoked or unprovoked, the time of bite, information on wound care,

and most importantly category of the wounds were not available.

CONCLUSION

On an average, In the District Hospital of Karimnagar, 6.43 cases of animal biteswere registered per day. A majority of these bites were due to dogs. Most of the bites were reported among younger age populations. Compared to the number of bites reported, a huge deficit is observed in the number of animals vaccinated. Other animal control measures were almost nonexistent, despite the huge burden of the animal bites in the District of Karimnagar.

Recommendations

Combating a disease like Rabies that is too well neglected is not easy unless several effective control measures are taken.Education plays an important role in both prevention of animal bites and the time taken to seek medical care. Uninterrupted vaccine and Immunoglobulin supply and political commitment could go miles in reducing the incidence of rabies to zero. A curriculum inclusive of rabies and its prevention could create awareness in young students. Continued and Coordinated effect of veterinary health personnel in vaccination and population control in coordination with other District Public departments should be a norm at every district. There is a need for strict legislation regarding Responsible dog ownership including compulsory vaccination of pet dogs and dog population management so that relevant data can help in procurement and administration of routine dog vaccines. Lastly, registration of all animal bites in a prescribed format must be made mandatory for proper and continued surveillance.

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CONFLICT OF INTEREST:

The authors declared no conflict of interest.

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