

Analysis of Animal bites in Kalaburgi City of Hyderabad-Karnataka Region

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Abstract

Introduction: Animal bites pose a public health problem in developed & as well as developing countries. Numerous animal species have the potential to bite humans, the most important are those arising from rabid animals. *Aims and objectives:* The Aim of the study was to evaluate patients with regards to age, sex, site, types of animal bite, category of bite, stray or pet animal, timing of presentation to hospital, First Aid management and awareness for Anti Rabies vaccine (ARV) in rabid animal bites. *Materials and Methods:* It was a prospective study carried out by department of surgery at the institute for a period of one year. All patients with animal bites were interviewed as per the proforma & statistical analysis of the data was done for obtaining results. *Result:* The majority of the bites were by dogs & in male patients, with peak age group in the First decade. Most common site was lower limb. Most bites were by stray dogs, followed by Rats & Cats. Majority applied homemade preparation as First Aid. Most patients were aware of ARV for dog bite. *Conclusion:* Of all animal bites dog bite cases were more common & seen in children. Majority were in males. Many people are not aware of First aid. With the availability of better media facilities the awareness of First Aid and seeking medical attention at the earliest can be increased. Anti-rabies clinic should be setup for better documentation and management at periphery, preventing the major financial burden incurred by general public.

Keywords: Dog Bite; Category; First Aid.

Introduction

Animal bites (specifically of rabid animal bites) are one of the Major public health concern. Animal bites may occur due to provoked or unprovoked actions. Developing countries suffer more because of less developed Health and veterinary services. Fatality due to animal bites is not common in domesticated animals. Nearly 20,000 people die of rabies every year in India [1]. In this era of mass communications and advanced health systems, even physicians know little about prophylactic measures following animal bites. After an animal bite, post-exposure rabies prophylaxis is the only way to prevent rabies disease [2]. Frequency & type of animal bites varies from region to region. In India, dog bites are more common [3].

In India, patients pay for nearly half of financial burden attributed to rabies [4]. Studies conducted at different parts of India had the limitations of area specificity and their results could not be generalized [5, 6]. Most of the studies on dog-bites and rabies in India are hospital-based and limited to their management [7, 8].

Materials and Methods

This is a unique study in this part of Karnataka, as such a study has not been performed before. Yearly more than 5500 cases of animal bite are reported to our hospital. This is a study of 1083 patients of animal bite coming to surgery OPD, of Gulbarga Institute of Medical Sciences (GIMS), Kalaburgi. This study was

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carried out over from June 2014 to May 2015, i.e., over a period of 12 months. For the study patient parameters like Age, Sex, Address, timing of presentation, type of animal, site, First Aid and awareness for Anti rabies Vaccine were recorded after obtaining consent..

In this study patients were categorized as male and female and were given different scorings (male =1, female=2). Patients were also given scoring for cleaning the wound, following any social customs as a first Aid for bite, type of biting animal, Stray or pet, the category of bite (Figure 1: Showing category 1 bite, Figure 2: showing category 3 bite by dog) and Awareness for ARV. The scoring system was followed for easy analysis of the data.

The modalities of treatment for the patients were medical (Anti rabies vaccine) and surgical Procedures for category 3 bites causing facial disfigurement and Haemorrhage. The type of vaccine supplied by government agency was Indirab (trade name). The vaccine is scheduled to be given on 0,3,7,28 days and optional 90 days. All patients were followed but a complete follow up of ARV was not completed. Postoperative care was meticulously followed for surgical patients to monitor complications. Medical management included treating the patient with First Aid (washing wound) and ARV. Patients with bites on Head neck & face were tabulated separately.

Inclusion Criteria

- Patients coming to OPD with animal bite.
- Patients with animal bite in any part of body.
- Patients of all age groups.

Exclusion Criteria

- Patients presenting after 24 hrs of animal bite.
- Patients consuming milk of animals bitten by rabid animals.
- Bite by animal at multiple sites.

Statistical Methods Used

- Frequency charting.
- Bar diagram.
- Chi square test.

Results

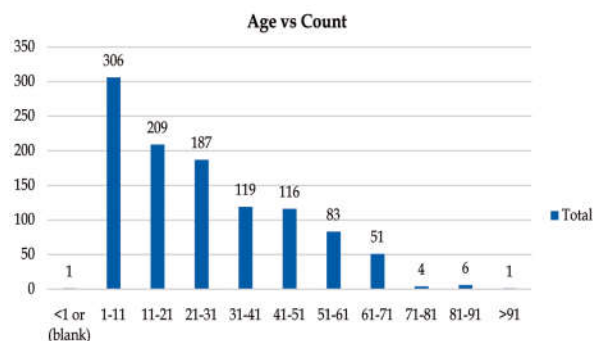
1. The maximum number of patients were found to be in the age group between 1-11 years i.e.,

306 patients (Table 1) (Graph 1).

2. The Majority of patients were males. i.e., 773 (Table 2).
3. Majority of the animal bites were reported from rural areas in the outskirts of the city. (609 of 1083).
4. Total number of patients with dog bite was 1000, followed by Rat bite & Cat bite (Graph 2).
5. Most of the patients had presented to hospital within 24 Hours i.e. 831 (Table 3).
6. Majority of patients had category 2 bite as per WHO (Table 4).
7. Incidence of stray animal bites was high accounting for 853 patients (Graph 3).
8. In all 710 patients had dog bite on lower limb and remaining had bites at different places.
9. Most common site in pet dogs and cats was Upper limbs.
10. Cat bites was common in women & Monkey bites among travellers.
11. Pig bites are common in lower limbs & population going for open air daefecation.
12. Rat bites are common in children and bedridden patients.

Table 1:

| Age in Years | No of patients |
|--------------------|----------------|
| <1 | 1 |
| 1-11 | 306* |
| 11-21 | 209 |
| 21-31 | 187 |
| 31-41 | 119 |
| 41-51 | 116 |
| 51-61 | 83 |
| 61-71 | 51 |
| 71-81 | 4 |
| 81-91 | 6 |
| >91 | 1 |
| Grand Total | 1083 |



Graph 1: Frequency distribution of Age groups

13. In the current study 635 patients didn't wash the site of bite (Table 5).
14. Of the other sites, other than limbs HNF (head, Neck, Face) was the common site (Table 6).
15. Most of the patients and their parents(in case of children) were self-aware of ARV(Anti Rabies Vaccine) for animal bites. (Graph 4).

Table 2: Frequency distribution of Sex

| Sex | Count |
|--------------------|-------------|
| Female | 310 |
| Male | 773* |
| Grand Total | 1083 |

Significant difference between male and female patients (P<0.001)

Graph 2: Frequency distribution of Type of Animal bites

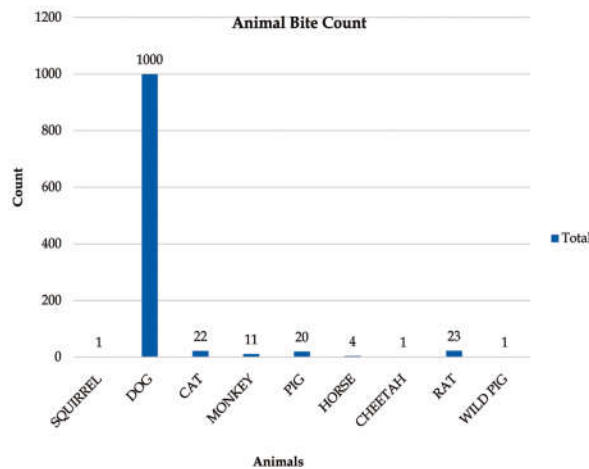


Table 3: Timing of bite to Consultation

| Presented within 24 hours | Count |
|---------------------------|-------------|
| No | 252 |
| Yes | 831* |
| Grand Total | 1083 |

(P<0.05) suggesting significant finding regarding consultation

Table 4: Frequency distribution of category of bite

| Category | Count |
|--------------------|-------------|
| 1 | 358 |
| 2 | 629* |
| 3 | 96 |
| Grand Total | 1083 |

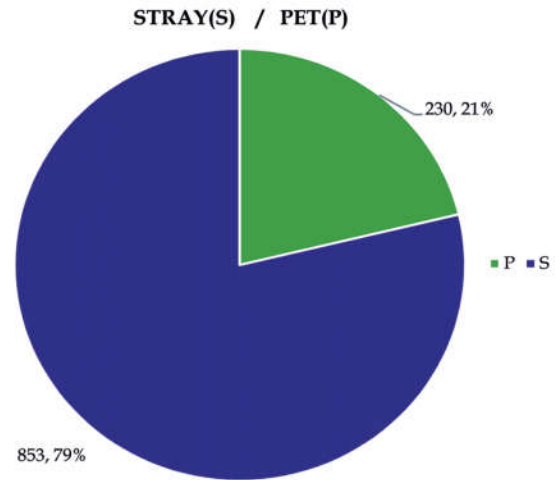
Table 5: Frequency distribution of washing wound as first Aid

| Cleaned | Count |
|--------------------|-------------|
| No | 635* |
| Yes | 448 |
| Grand Total | 1083 |

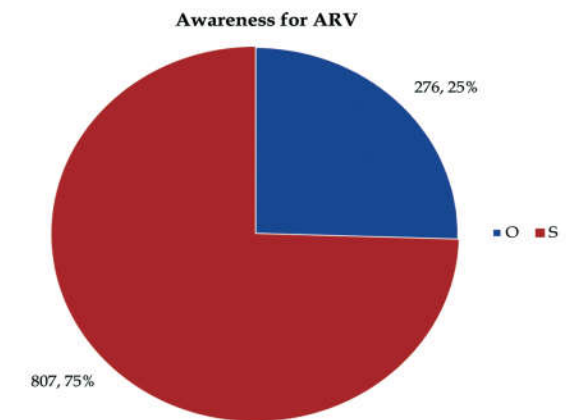
(P<0.05)

Table 6: Frequency distribution of bite other than limbs

| Other Site | Count |
|--------------------|-----------|
| Abdomen | 16 |
| Back | 12 |
| Genitalia | 6 |
| Hnf | 38* |
| Grand Total | 72 |



Graph 3: Frequency distribution of pet and stray animals



Graph 4: Frequency distribution awareness of ARV
O= Others advising ARV, S= Self awareness



Fig. 1: Category 1 bite



Fig. 2: Category 3 bite by dog

Discussion

The commonest age group was 1-10 years for animal bites as per our study. Dogs being the most common animal for bite. Cat bites were common among adult females. Some of the series for dog bites reported age between 1-15 years [9]. Dog bites typically affects children more commonly than adult [10]. We attribute the finding to children's outdoor activities like going to school & playing. Our study did have similar report. Dog bites are common in males than females [11, 12]. Our series had a similar finding. Women being fully clothed (in saree) and doing household activities the incidence is less. In our study stray dog bites were common. M.K. Sudarshan et al reported that stray dog bites are common than pet dog bites. In our study 831 patients presented within 24 hours. In another series by K. M. Kale reported that most cases presented within three days [13]. Majority of patients do not wash their wounds as per M.K. Sudarshan et al. which was a similar finding in our study. Dog bites are common in lower limbs as per our study and V. Khan et al in case of stray dogs. As per the literature search dogs and pigs being short animals and Human beings having upright erect posture the most common accessible site for the bite by these animals is lower limbs. Pet dog bites are common in upper limbs usually during giving bath or feeding or accidental stamping of animal. Pig bites are common in people going for open air defecation (due to non-availability of toilets). Rat bites are common in children & bedridden individuals. Although some studies have proved that category III dog bites are common [14]. In our study we found a different finding that category II bites were more common which was a similar finding to K.M Kale et al [13]. The awareness level of study subjects with regard to preventive aspects of Rabies revealed that only 61.1 per cent knew that rabies transmits through animal bites [15], but in our study the awareness level was high (807 of 1083) 74.5 %.

The following conditions most likely call for surgical intervention.

1. Category III bites from rabid animals with oozing of blood.
2. Facial disfigurement.
3. Bites on neck causing injury to trachea and oesophagus.

Most patients did receive Immunoglobulin in category III bites. As part of this study most patients who did not wash their wounds (635) were educated regarding washing of wound with soap and water. The study did have important role in documenting animal bites and educating patients regarding First Aid.

Conclusion

1. Animal bites are common in rural population.
2. The most common age group for animal bites is 1-11 years.
3. Dogs are the most common animal to bite Humans.
4. Animal bites are common among Men.
5. Stray animal bites are more common than pet.
6. Most common site of dog bites is lower limbs.
7. Pet dog bites and cat bites are found on upper limbs.
8. Most patients present to hospital within 24 Hours.
9. Majority of patients have category 2 bites.
10. Although presentation of patients is within 24 hours, Majority still resort to traditional methods and customs. They do not wash the site of bite.
11. Most of the patients are self-aware of ARV (Anti Rabies Vaccine)
12. Patients need to be educated regarding First Aid management of Dog bites.
13. Anti-Rabies clinics should be set up at high incidence areas for better surveillance and patient education.
14. We strongly recommend setting of Anti-Rabies clinic so that proper follow up is recorded.

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