



## Awareness among Students of a Medical College Regarding Management of Animal Bite in Bijapur, Karnataka

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### ABSTRACT

**Introduction:** Considering its fatality, any animal bite should be dealt with utmost care. So, it becomes imperative that the health care professionals have appropriate knowledge about the animal bites, risk prevention of Rabies, and be better equipped to tackle this menace more efficiently. This study conducted to assess the level of awareness among students of a medical college regarding management of animal bites

**Materials and methods:** A cross sectional study was conducted during June to July 2015 among 106 final year medical students and interns.

**Results:** Majority of the subjects could correctly classify (Category 1- 62%, Category 2 - 66% and Category 3 - 72.0%) the animal bite wound. With regard to post exposure prophylaxis, only 24% of the study subjects were aware of the correct intradermal schedule and 30% of them were aware of the intramuscular schedule. As a first aid measure after a dog bite, 52% of the subjects were of the opinion that the wound has to be washed with soap and water, 22% opined that secondary suturing should be done after serotherapy and 35% knew that bandaging has to be done only in case of heavy uncontrolled bleeding. Forty six percent of the subjects were aware of the management of category 2 bite wounds.

**Conclusion:** Our study found most of the subjects were aware of the proper categorization of animal bite wound and the prevention of rabies but very few could correctly mention the right schedule of post exposure vaccination to be done

**Keywords:** Rabies, World Health Organization, Medical students, Antirabies vaccination.

### INTRODUCTION

Rabies is a preventable yet fatal disease that is responsible for approximately 59 000 deaths each year. However, widespread underreporting of rabies cases means that the actual number of deaths is likely to be higher.<sup>1,2</sup>

Over 95% of human cases are caused by the bite of a rabies-infected dog and disproportionately affect rural communities, particularly children, from economically disadvantaged areas of Africa and Asia, where awareness of the disease and access to appropriate post-exposure prophylaxis is limited or non-existent.<sup>3,4,5,6</sup>

The situation is especially pronounced in India, which reports about 18 000 to 20 000 cases of rabies a year and about 36% of the world's deaths from the disease. Rabies incidence in India has been constant for a decade, without any obvious declining trend, and reported incidence is probably an underestimation of true incidence because in India rabies is still not a notifiable disease.<sup>7,8,9,10,11,12</sup>

Considering its fatality, any animal bite should be dealt with utmost care. So, it becomes imperative that the health care professionals have appropriate knowledge about the animal bites, risk prevention of Rabies, and be better equipped to tackle this

menace more efficiently. Thus, this study was carried out to assess the level of awareness regarding management of animal bites among students of a medical college who play a major role in prevention of rabies.

### OBJECTIVES

Objectives of this study was to assess the level of awareness among students of a medical college regarding management of animal bites

### MATERIALS AND METHODS

This cross sectional study was conducted among the residents of a medical college in district Bijapur, between June to July 2015. After obtaining the institutional ethical committee clearance, study was conducted among final year medical students and interns regarding their awareness on the management of animal bite. A total of 106 medical students were included (convenient sample) in the study who were in their final year and were doing internship.

A questionnaire was designed to elicit their knowledge regarding the animal bite. The questionnaire included the questions regarding the symptoms, classification of animal bite wound, wound management and about the anti-rabies vaccination. The questionnaire was semi structured with prior pilot study being done. Written informed consent was taken from the subjects prior to the study. Onetime assessment was done as it's a cross sectional study design to know their level of knowledge. The responses were noted, coded and entered in an excel sheet and analysed accordingly. The results obtained were expressed in terms of percentages and proportions

### RESULTS

The study participants comprised of students from final year MBBS and those who were doing internship. Majority (62%) of them were males. Nearly 3/4<sup>th</sup>(74%)of the subjects mentioned dog as the primary mode of transmission of rabies. Only one third of the participants knew the correct incubation period for rabies. Only 68.8% of them mentioned hydrophobia as one of the major sign of ra-

bies. Sixteen percent of the subjects did not know any of the symptoms of rabies. [Table 1]

Majority of the subjects could correctly classify (Category 1- 62%, Category 2 – 66% and Category 3 – 72.0%) the animal bite wound. [Table. 2] With regard to post exposure prophylaxis, only 24% of the study subjects were aware of the correct intradermal schedule and 30% of them were aware of the intramuscular schedule. [Table. 3]As a first aid measure after a dog bite, 52% of the subjects were of the opinion that the wound has to be washed with soap and water, 22% opined that secondary suturing should be done after serotherapy and 35% knew that bandaging has to be done only in case of heavy uncontrolled bleeding.

Forty six percent of the subjects were aware of the management of category 2 bite wounds. Almost one third (32%) of them knew the correct dose of immunoglobulins to be used and most of the dose should be injected around the wound. Less than half of them opined that antibiotics should be given following animal bite. Only 10% of them knew preexposure prophylaxis for rabies. Most of them (82%) stressed the need for a training for health professionals at regular intervals regarding prophylaxis and management of animal bites.

**Table 1: Distribution of the study subjects by their knowledge regarding rabies. (N = 106)**

Variables	Correct knowledge
<b>Modes of transmission</b>	
Dog bite only	78 (74)
Bites of Dog, Cat and bat	18 (17)
Animal bite & contact with infected saliva	10(9)
<b>Symptom</b>	
Hydrophobia	72 (68.8)
Photophobia	11 (10.0)
Dehydration	5 (5.0)
Did not know	18 (16.0)

Figure in parenthesis indicate percentage

**Table 2: Distribution of study subjects by their ability to classify animal bite wound (N = 106)**

Variables	Correct Knowledge	Incorrect Knowledge	Did not Know
Category 1	65 (62)	32(30)	9(8)
Category 2	70 (66)	28 (26)	8 (8)
Category 3	76 (72)	19 (18)	11 (10)

Figure in parenthesis indicate percentage

**Table 3: Distribution of study subjects by their knowledge on Antirabies vaccination schedule (n=106)**

Variables	Correct Knowledge	Incorrect Knowledge	Did not know
Intradermal schedule, dose and site	26 (24)	70 (66)	10 (10)
Intramuscular schedule, dose and site	32 (30)	59 (56)	15 (14)
Antirabies Immunoglobulins dose	34 (32)	40 (38)	32 (30)

Figure in parenthesis indicate percentage

## DISCUSSION

Nearly 3/4<sup>th</sup> (74%) of the subjects mentioned dog as the primary mode of transmission of rabies. Only 68.8% of them mentioned hydrophobia as one of the major sign of rabies. Sixteen percent of the subjects did not know any of the symptoms of rabies. As a first aid measure after a dog bite, 52% of the subjects were of the opinion that the wound has to be washed with soap and water, 22% opined that secondary suturing should be done after serotherapy. Majority of the subjects could correctly classify (Category 1- 62%, Category 2 - 66% and Category 3 - 72.0%) the animal bite. Less than one third of them knew the correct schedule, dose and site of administration of the antirabies vaccine whether its intra-dermal or intramuscular.

In a study done among doctors in Jodhpur, approximately 95% doctors considered dogs along with other animals to be the source of rabies. More than 90 % of them were aware of the fact that wound washing prevents the virus transmission from site of animal bite to central nervous system. Less than 50% of them could correctly classify the animal bite wounds. Knowledge regarding the use of anti-rabies vaccine and the site of its administration was known to 45% and 53% doctors respectively. Ninety one percent doctors considered suturing to be avoided as far as possible.<sup>8</sup> This finding is similar to the findings from our study except the fact that much of our study subjects could correctly classify the animal bite.

In a study done on physicians by Ravish et al, the knowledge of rabies prevention was low, especially regarding classification of bite wounds (55.9%), type of animals transmitting rabies (66.9%), correct dose of equine immunoglobulin (ERIG) (66.9%) and preexposure prophylaxis (PrEP) (68.8%). There was relatively good knowledge concerning the importance of wound washing (80.7%), number of doses of vaccine (74.4%) and dose-schedule of intra dermal rabies administration (IDRV) (75.2%). Our study also found the similar findings. A study by Bhalla et al also showed the similar findings.<sup>13, 14</sup>

Chowdhury et al., about three fourths (73.8%) of interns knew that the site of vaccination was the deltoid. Both intramuscular and intra-dermal routes of vaccination were known to 10%. The correct schedule of administration was identified by 41.2% of the interns. Only 10% of the interns in the present study noted the correct recommendations regarding vaccination and immunoglobulin administration in Category I wounds. The percentages were 57.5 for Category II and 85% for Category III bites. Wound management was not thought important by 6.2% of the interns while 5% did not recommend RIG for Cat III cases. Correct

knowledge regarding RIG (Equine) and RIG (Human) dose was seen in 15% and 41.3% of the responses.<sup>15</sup> Few of the findings were in contrast to the findings from our study as their study had involved interns in a government medical college.

In a study done by Singh et al, out of total 100 General Practitioners, 45 were doctors practicing allopathic medicine and the rest practicing AYUSH with 14 years of average duration of practice. All doctors in Group 1 and 60% in Group 2 correctly answered the mode of transmission of rabies. A total 68% and 29% respondents in Group 1 and Group 2, respectively, correctly told that the wound must be washed with soap and water for minimum period of 15 min. On being asked about the different types of vaccinations used against rabies, 35% doctors in Group 1 and only 10% doctors in Group 2 could correctly answer about the different types of vaccination used. A total 71% and 11% respondents in Group 1 and Group 2, respectively, could correctly answer about the target groups for pre-exposure prophylaxis.<sup>16</sup> The doctors practicing allopathic medicine had better knowledge regarding management of animal bites (which is much similar to the findings from our study) compared to doctors practicing AYUSH as the initial point of contact for animal bite cases will be allopathic doctors.

## CONCLUSION

Our study found most of the subjects were aware of the proper categorization of animal bite wound and the prevention of rabies but very few could correctly mention the right schedule of post exposure vaccination to be done. Training programme to refresh the learnt knowledge about prevention of rabies at periodic intervals is thus very much necessary to combat the problem

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