Research Article

Awareness regarding rabies and its prevention among final year medical students in a tertiary health care institute in Mandya, Karnataka

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Abstract

Introduction: Rabies continues to be a major public health problem in India, with an estimated 20,000 people dying of this disease every year. Rabies is an almost 100% fatal disease and at the same time it is almost 100% preventable. Medical graduates constitute a key source of medical care for antirabies treatment to the victims of animal bites. **Aims and Objectives**: To assess the knowledge among the medical students in a rural tertiary care institute regarding awareness of rabies and its prevention. **Materials and Methods**: A cross sectional study was conducted during January 2015 among 96 final year medical students to assess the knowledge regarding rabies and its prevention. A pretested structured questionnaire was administered after obtaining the consent. The data were entered and analyzed using Microsoft excel. **Results**: Our study found that less than half of the study subjects were aware of the mode of transmission and incubation period of rabies. Two third of them knew soap and water should be used for cleaning the wound after a bite and 36.5% of the subjects were of the opinion that bandaging has to be done in selective cases of uncontrolled bleeding. The knowledge regarding intramuscular and intradermal schedule, dose and site was 28.1% and 9.4% respectively. **Conclusion**: There is a need for emphasizing the public health importance of rabies and its prevention which can be done by sensitizing the students during internship and Continued Medical Education programmes at regular intervals.

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

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Email: shashikanth.85@gmail.com
Received Date: 27/02/2015 Revised Date: 01/03/2015 Accepted Date: 06/03/2015

Access this article online

Quick Response Code:

Website: www.statperson.com

DOI: 08 March 2015

INTRODUCTION

Rabies is a zoonotic disease that is caused by a virus. The disease affects domestic as well as wild animals and is spread to people through close contact with infectious material, usually saliva, via bites or scratches.[1] According to World Health Organization (WHO) estimates, approximately 55,000 human deaths are reported every year worldwide from rabies, out of which 32,000 deaths occur in Asia.[2] Rabies continues to be a major public health problem in India, with an estimated 20,000 people dying of this disease every year. The estimated annual incidence of animal bites in India is 1.7%, with 90% of reported cases being result of dog bites.[3,4] A person sustains an animal bite every 2 seconds and someone dies from rabies every 30 minutes. Rabies leads to extremely painful and torturous death.[5] Rabies is an almost 100% fatal disease and at the same time it is almost 100% preventable.[6,7] Medical graduates constitute a key source of medical care for antirabies treatment to the victims of animal bites. The main objective of this study was to assess the knowledge among the medical students in a rural tertiary care institute in B G Nagar, Mandya District regarding awareness of rabies and its prevention.

How to site this article: Shashikantha S K, Vishma B K. Awareness regarding rabies and its prevention among final year medical students in a tertiary health care institute in Mandya, Karnataka. *International Journal of Recent Trends in Science and Technology* March 2015; 14(2): 284-287 http://www.statperson.com (accessed 09 March 2015).

MATERIALS AND METHODS

A cross sectional study was conducted in the month of January 2015 among the final year MBBS students of Adichunchanagiri Institute of Medical Sciences, B G Nagara, Nagamangala Taluq, Mandya District. Among the 110 final year students, we could obtain the information from 96 students as the rest were absent during three consecutive visits. Informed consent from the students with prior ethical committee approval was taken beforehand. A pretested structured questionnaire was administered to assess their knowledge about rabies, classification and management of bite wounds, including the different vaccination schedule site and doses. The data was entered and analyzed using Microsoft Excel. The results obtained were expressed in terms of percentages and proportions.

RESULTS

The study participants (N=96) comprised of 61 male and 35 female students of final year MBBS. The mean age of the study participants was 22.02 ± 1.10 years ranging from 21 to 25 years. Nearly half (43.8%) of the subjects mentioned dog as the prime mode of transmission of rabies. Only one third (35.4%) of the subjects knew the correct incubation period of rabies. In response to symptoms of rabies in humans, only 68.8% of them mentioned hydrophobia. Twenty six percent of the subjects did not know any of the symptoms of rabies. Majority of the subjects could correctly classify (Category 1- 81.3%, Category 2 – 72.9% and Category 3 – 76.0%) the animal bite. Only 9.4% of the study subjects were aware of the correct intradermal schedule and 28.1% of them were aware of the intramuscular schedule. As a first aid measure after a dog bite, 11.5% of the subjects were of the opinion that the wound has to be washed with soap and water and antiseptic has to be applied, 28.1% opined that secondary suturing should be done after serotherapy and 36.5% knew that bandaging has to be done in case of heavy uncontrolled bleeding. Only half of the subjects knew to treat category 2 bite wounds as shown in Figure 2. More than half of the subjects (61.5%) knew that most of the dose of immunoglobulins should be injected around the wound. Less than one third of the subjects mentioned the correct dose of immunoglobulins. The period of observation following bite was correctly mentioned by 56.3% of the subjects. Forty percent of the subjects were of the opinion that adequate facility for animal bite management should be at all levels from village to tertiary health care institute. Less than half of them opined that antibiotics should be given following animal bite. Most of them (85.4%) stressed the need for a training program for health professionals at regular intervals regarding prophylaxis and management of rabies.

Table 1: Distribution of the study subjects by their knowledge regarding rabies

Variables	Correct knowledge
Modes of transmission	
Dog bite only	42 (43.8%)
Bites of Dog, Cat and bat	24(25.0%)
Animal bite and contact with infected saliva	22(22.9%)
Symptom	
Hydrophobia	66 (68.8%)
Photophobia	3(3.1%)
Dehydration	2 (2.0%)
Did not know	**25 (26.1%)**

Table 2: Distribution of study subjects by their knowledge regardingAntirabies vaccination schedule

Variables	Correct Knowledge	Incorrect Knowledge	Did not know
Intradermal schedule, dose and site	9(9.4)	75(78.1)	12(12.5)
Intramuscular schedule, dose and site	27(28.1)	58(60.4)	11(11.5)
AntirabiesImmunoglobulins dose	28(29.2)	40(41.7)	28(29.2)

(The values in parenthesis indicate percentage)

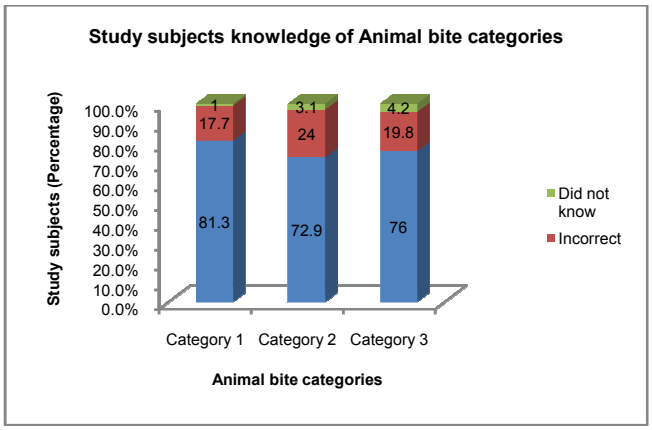

Figure 1: Distribution of the study subjects by their ability to classify animal bite wound

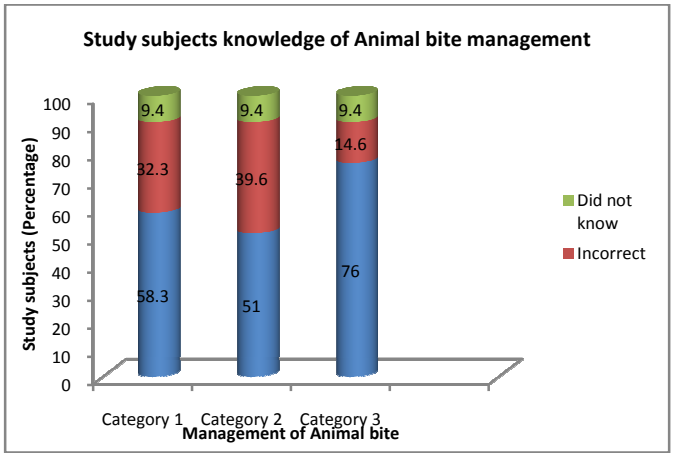

Figure 2: Distribution of the study subjects by their knowledge of animal bite management

DISCUSSION

Our study was conducted among the final year medical students of a tertiary health care institute in a rural area of Mandya District. The main aim of the study was to assess the knowledge regarding Rabies and its prevention measures as they will be the first point of contact to a victim of dog bite in rural areas after completion of their graduation. Our study found that less than half of the study subjects were aware of the mode of transmission and incubation period of rabies. Two third of them knew soap and water should be used for cleaning the wound after a bite and 36.5% of the subjects were of the opinion that bandaging has to be done in selective cases of uncontrolled bleeding. A study done by Nayak *et al*, found that the knowledge of mode of transmission was more than 80%, 66% of the MBBS doctors preferred to use soap and water as the first step in management of dog bite wound and 57 % of them preferred bandaging the wound.[5] In a study by Singh A *et al*, more than three fourth of the subjects knew the correct incubation period of rabies, all the subjects had correct knowledge regarding mode of transmission of rabies. More than 80% of the subjects knew the first aid measures following an animal bite.[8] This difference in knowledge level might be due to the reason that the general practitioners frequently come across animal bite cases. The WHO classifies the dog bite wounds into three categories.[1] In the present study, 81.3%, 72.9% and 76% of the study subjects correctly classified the dog bite wounds into category 1, category 2 and category 3 respectively. Study done by Ravish *et al* showed that 55.9% of the physicians correctly classified the wounds.[9] In a study conducted in Jamnagar, knowledge regarding categorization of wounds was very poor.[10] Similarly only 6% of the general practitioners in Belgaum could categorize the dog bite wounds correctly.[5] Knowledge regarding intramuscular schedule, dose and site was poor (28.1%) in our study. In a study done by Garg *et al* majority (81.4%) were aware of the post exposure schedule in unimmunized individuals.[11] Whereas 24% of the doctors knew the correct schedule in a study conducted in Jamnagar.[10] In a study by Shah S F *et al*, the correct knowledge regarding intramuscular schedule was poor (10.6%) among the general practitioners.[12] Knowledge regarding the intradermal schedule was very poor in the present study

(9.4%). Study conducted by Ravish *et al* showed that 75.2% of the doctors knew the correct intradermal schedule.[9] In a study conducted in Delhi among the allopathic doctors, it was found that less than half were aware of the intradermal rabies prophylaxis schedule (39.1%), site (42.2%), and dose (48.4%).[11] Knowledge of the intradermal schedule is necessary in view of its cost effectiveness. In the present study, 61.5% and 29.2% of the study subjects were aware of the correct site and dose of administration of immunoglobulins. In a study conducted in Jamnagar nobody had knowledge of usage of immunoglobulins. The correct dose of immunoglobulins was known to 11.11% and 66.9% in studies conducted by Singh A *et al* and Ravish *et al*.[8,9]

CONCLUSION

There is a need for emphasizing the public health importance of rabies and its prevention. Focus must be on better understanding of the modes of transmission, WHO categorization of bite wounds, principles of animal bite management, correct dose and schedule of vaccination and use of immunoglobulins. This can be done by sensitizing the students during internship and Continued Medical Education programmes at regular intervals.

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Source of Support: None Declared
Conflict of Interest: None Declared