Original Article

Dog bite and its management: Awareness among the f rst year students of a Medical College.

Bhaskar Gaikwad[1], Pramod Kulkarni[2], Anant Takalkar[3], Mukund Bhise[4], Sarita Mantri[5]

[1]Associate Professor, [2] Post graduate student, [3]Professor, [4]Professor & Head, [5]Professor.
Department of Community Medicine, MIMSR Medical College, Latur, Maharashtra.

ABSTRACT

Introduction: Animal bites are major public health issues, not only for the risk of acquiring secondary infections but also for the possibility of contracting rabies. Rabies is a preventable acute and fatal viral infection caused by a single stranded RNA virus. Rabies in India has been a disease of low public health priority in the medical sector. This is very unfortunate as almost 50,000 deaths from rabies occur across the globe of which, 20,000 occur in India every year, making it the country with the highest rabies fatalities in Asia and the second highest in the world. After an animal bite, post-exposure rabies prophylaxis is the only way to prevent rabies disease. Community awareness on all aspects of rabies is generally lacking viz. f rst aid, management of animal bites, pre & post exposure prophylaxis etc. There are many myths and false beliefs associated with wound management. These include application of oils, turmeric powder, and red chillies on the wounds inf icted by suspect rabid animals, and not washing the wound properly. The present study was undertaken with an objective to assess knowledge regarding Rabies and its prevention among the f rst year medical college students.

Objectives: To assess the knowledge regarding dog bites, rabies and post exposure prophylaxis following an animal bite among the f rst year Medical students.

Methods: This study was a descriptive study conducted at MIMSR Medical College Latur using a pre tested questionnaire.

Result: A total 131 f rst year students included in this study. 66(51.9%) were males and rest were females 63(48.1%). 113(98.26%) knew that rabies is caused by dog bite, 89(67.94%) knew that rabies is caused by virus. 78(59.54%) knew that rabies is transmitted through bite of animal. Among the participant, 116 (88.55%) were aware about the vaccine availability and 110(94.82%) knew vaccine is available in Government hospital.

Conclusion: Majority of the MBBS students of the f rst year knew that rabies is caused by virus which is transmitted through dog bite 113(86%) students knew about symptoms and post exposure measures correctly. Students had poor knowledge about the other modes of transmission animal that can transmit rabies and number of doses of Anti Rabies Vaccine.

Key words: Dog bite, Rabies, Anti Rabies Vaccine.

Introduction

Animal bites is a major public health problem, not only for the risk of acquiring secondary infections but also for the possibility of contracting rabies.

***Corresponding Author :**

Dr. Bhaskar Gaikwad,
Associate Professor
Dept. Of Community Medicine
MIMSR Medical College, Latur
Email:bhaskar_gaikwad@rediffmail.com

Rabies is a preventable acute and fatal viral infection caused by a single stranded RNA virus belonging to genus Lyssavirus of the family Rhabdoviridae[1]. Despite the availability the effective vaccine which ensure near hundred percent protection against rabies, India is the second large contributor to rabies mortality in the world. It is a zoonotic disease and nearly 95% of human rabies deaths

are caused due to bite from rabid dogs. However it is preventable by early initiation of post exposure prophylaxis consisting of proper local treatment of wounds, administration of rabies vaccines & rabies immunoglobulin in category 3 exposure[2]. As per a WHO estimate, globally 50,000 human rabies deaths are reported every year of which, 56% occur in Asia and 44% in Africa. The majority (84%) of these deaths occur in rural areas[3]. Rabies in India has been a disease of low public health priority in the medical sector. This is very unfortunate as almost 50,000 deaths from rabies occur across the globe of which, 20,000 occur in India every year, making it the country with the highest rabies fatalities in Asia and the second highest in the world[4]. After an animal bite, post-exposure rabies prophylaxis is the only way to prevent rabies disease[5]. Community awareness on all aspects of rabies is generally lacking viz. f rst aid, management of animal bites, pre & post exposure prophylaxis etc. There are many myths and false beliefs associated with wound management. These include application of oils, turmeric powder, and red chilies on the wounds inf icted by suspect rabid animals, and not washing the wound properly[6]. The present study was undertaken with an objective to assess knowledge regarding Rabies and its prevention among the f rst year medical college students.

Objectives:

1. To assess the knowledge regarding rabies and its prevention.

2. To assess the knowledge regarding post exposure prophylaxis following an animal bite.

Materials and Methods

This study was conducted at MIMSR Medical College Latur. This was a cross sectional study in which all the f rst year medical students of 2016-2017 batch were approached with a pre- designed and pre-tested questionnaire regarding various aspects of rabies and its prevention. Data was collected from 131 f rst year medical students who consented to participate in the present study. This data was analyzed using MS Excel 2012 software.

This is a Cross-sectional study conducted among all the f rst year medical students of the batch 2016-2017 from 15th December 2016 to 15th January 2017. The study subjects included were Students present on day of interview and willing to participate and students absent on day of interview were excluded from study.

Results

Total 131 participants were included in the study 68 were males (51.9%) and rest were females 63 (48.1%). Out of 131 participants. 115 (88%) subjects were aware that dog bite causes disease, while 16 (12%) were not aware that dog bite cause the disease.

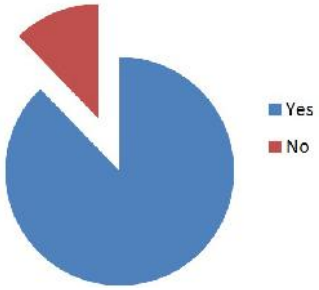

Fig 1. Awareness of disease caused by dog

Table 1: Distribution according to knowledge about the disease caused by dog bite (N=115)

Disease	Frequency	Percent
Rabies	113	98.3
Don't know	2	1.7
Total	115	100

Out of 115,113 (98.3%) were aware that dog bite cause the rabies.

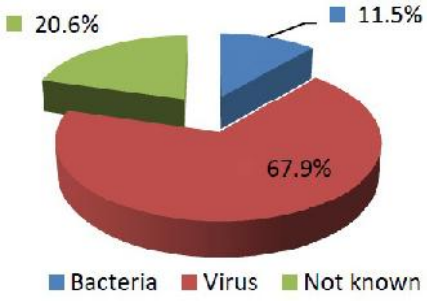

Fig 2: Knowledge of the causative agent of rabies (N=131)

Of the 131 students 67.9% students answered that rabies is caused by virus while 11.5% students told that it is caused by bacteria and 20.6% does not know the causative agent.

Table 2: Knowledge of modes of transmission*

Mode of transmission	Frequency	Percent
Animal bite	78	59.5
Scratch	14	10.7
Licks on broken skin	13	9.9
Touching secretion of rabid animal	3	2.3
Touching secretion of rabid person	16	12.2
Do not know	18	13.7

Majority i.e. 78(59.5%) of students replied animal bite as mode of transmission,14 (10.7%) knew that it could be transmitted by scratches, 13 (9.9%) knew that it could be transmitted by licks on broken skin,3 (2.3%) knew that it could be transmitted by touching secretions of rabid animal, 16(12.2%) knew that rabies can be transmitted by touching secretions of rabid person and 18 (13.7%) students do not know the mode of transmission.

Table 3: Knowledge regarding which animal bite transmits rabies

Animal bite	Frequency	Percent
Dog	115	87.8
Monkey	39	29.8
Fox	5	3.8
Cat	15	11.5
Rodent	21	16

115(87.8%) students knew that rabies is transmitted by dogs; some of the students knew that rabies is transmitted by other animals like monkey (29.8%), fox (3.8% cat(11.5%) and rodents(16%) respectively.

Table 4:Knowledge about symptoms of rabies. (n=131)

Symptoms	Frequency	Percent
Hydrophobia	101	77.1
Aerophobia	5	3.8
Mad	24	18.3
Behave like animal	16	12.2
Bleeding	4	3.1
Fever	13	9.9

Table 4 shows the knowledge about the primary symptoms of rabies; 101(77.1%) students told about symptoms which include hydrophobia, followed by madness 24 (18.3%), behave like animal 16(12.2%), fever 13(9.9%), aerophobia 5(3.8%) and bleeding 4(3.1%).Regarding the wound management 88(67.2%) knew that attending a private/ Government hospital after animal bite is necessary, however 6 (4.6%) had incorrect knowledge, like chilli, limes should be applied after animal bite 25(19.9%) knew that an antiseptic has to be applied to animal bite, 34(26.0%) knew that wound should be washed with soap and water. 116(88.6%) students were aware that the vaccine is available for dog bite. Out of 116 students, 110(94.82%) said that the vaccine is available in government hospital (district hospital, community health centre, primary health centre and Municipal hospital).

Regarding the schedule of antirabies vaccination majority felt that 14 doses (33.6%) are to be given followed by 5 injections (6.1%) and 3 injections (9.2%) respectively.

Discussion

Study was conducted during the period between 15th December 2016 to 10th January 2017. Total 131 students of f rst year M.B.B.S were included in the study. 68 students (51.9%) were males and rest were females 63(48.11%). Age of the study population ranges from 17 years to 21 years.

In the present study out of 131 participants, 115(88%) were aware that dog bite causes the disease while 16(12%) were not aware that dog bite causes the disease.

Smita S. Valekaret al[9] in their study observed that

out of 144 study participants, 111(77%) were aware that dog bite causes disease while 33(23%) were not aware that dog bite causes disease.

Of the 131 students 89 (67.9%) knew that rabies is caused by viruses, 15 (11.5%) students knew that rabies is caused by bacteria and 27 (20.6%) does not know the causative agent. A Study carried out by Praveen G, Rajashekar HK[7] observed that out of 90 students 88(88.8%) knew that rabies is caused by virus, the rest were of the opinion that rabies is caused by bacteria.

78 (59.5%) students knew that rabies is transmitted through the bite of an animal, 14 (10.7%)knew that it could be transmitted by scratches, 13 (9.9%) knew that it could be transmitted by licks on broken skin, 3 (2.3%) knew that it could be transmitted by touching secretions of rabid animal, 16 (12.2%) knew that rabies can be transmitted by touching secretion of rabid person. 18 (13.7%) students do not know the mode of transmission. (Vinay et al in their study, observed that 89(97.80%) students knew that rabies is transmitted through the bite of animal.

In the study carried out by Pawan Parashar et al[8],it was observed that 94.66%individuals knew about its transmission through the dog bites. Students knew that rabies could also be transmitted by scratch (17.3%), lick on broken skin or mucous membrane (11.7%), touching secretions of rabid animal (16.3%), and touching secretions of rabid person (9.1%).

Regarding symptoms of rabies, 101(77.1%) students knew that hydrophobia is the symptom of rabies, followed by 24(18.3%) students felt that patients with rabies become mad and 16(12.2%) students thought that person with rabies will behave like animal. In the study carried out by Pawan Parashar et al[8] on question to symptoms of rabies in human, 27.46% students knew about hydrophobia, Smita S. Valekar et al[9] in their study observed that the knowledge about the symptoms of rabies; (24,21.6%) told about madness followed by hydrophobia (16, 14.4%), bleeding (10,9%), fever (2,1.8%).

Table 5: Knowledge regarding Post Exposure measures to be undertaken in a case of dog bite.

Knowledge of Post Exposure Measures	Frequency	Percent
Wound wash with only water	19	14.5
Wound wash with soap and water	34	26
Seeking Traditional treatment like putting chilli powder or turmeric	4	3.1
Applying lime	2	1.5
Applying antiseptic	25	19.1
Attending private clinic /Govt hospital for Anti Rabies vaccine	88	67.2
Sought remedies from traditional healers	2	1.5
Do not know what to do	4	3.1
Do nothing	7	5.3

Table 7: Awareness about anti rabies vaccine

Awareness about anti rabies vaccine	Frequency	Percent
Yes	116	88.6
No.	15	11.5
Awareness about place of - availability of vaccine	Frequency	Percent
District hospital	32	27.6
Community Health Centre	26	22.4
Primary Health Centre	35	30.2
Municipal Hospital	46	39.7
Pharmacy	6	5.2

Table 8: Awareness about number of doses of vaccine

Awareness about number of doses of vaccine to be taken (N=131)	Frequency	Percent
1 Dose	5	3.8
2 Doses	3	2.3
3 Doses	12	9.2
4 Doses	5	3.8
5 Doses	8	6.1
10 Doses	1	0.8
14 Doses	44	33.6
21 Doses	2	1.5
Not known	51	38.9

In a study conducted by Praveen G, et al[7], 44 (48%) students knew that hydrophobia and aerophobia are the symptoms of rabies in the human beings, 20 (22.2%) students thought that person with rabies will behave like animal and 15 (16.6%) students felt that the person with rabies becomes mad.

Regarding the wound management, 88(67.2%) knew that attending a private/ Government hospital after animal bite is necessary, however 6(4.6%) had incorrect knowledge, that chilli, limes should be applied after animal bite, 25(19.1%) knew that an antiseptic has to be applied to animal bite and 34(25.95%) students knew that wound should be washed with soap and water. Smita S. Valekar et al[9]studiedawareness of wound management after dog bite and observed that wound has to be cleaned with water (54.8%), followed by tie the wound (48.6%), clean with soap and water (44.4%), applying antiseptics (41.6%), application of lime (16.6%). Praveen G et al7in their study revealed that 60 (66.66%) students felt that animal bite wound should be washed with soap and water, 55 (61.1%) knew that an antiseptic has to be applied to the animal bite wound.

Pawan Parashar et al[8] in their study, observed that regarding the wound management 46.93% were the believers of some old methods of treatment like-application of chillies (red) powder and 08.00% used herbal paste.

Among the participants,116(88.55%) students were aware about the vaccine is available for dog bite. Smita S. Valekar et al[8] in their study found that,138 (95.8%) were aware about the vaccine availability for the dog bite. Kamble et al[11]in their study found that 226(91%) participants knew about availability of vaccine for patients of rabies.

Out of 116 students, 110(94.82%) said that the vaccine is available in government hospital (district hospital, community health centre, primary health centre and Municipal hospital.) while 6(5.8%)said in private hospital. Smita S. Valekar et al[9] in their study found that out of 138, 125 (90.5%) said that the vaccine is available in government hospitals while 13(9.4%) said that vaccine is available in private hospitals.

Regarding awareness about number of vaccine doses (Injections) to be taken, a large number of participants responded that 14 doses (33.59%) followed by 5 injections (6.11%) and 3 injections (9.16%) should be taken. Smita S. Valekar et al[9] in their study observed that, a large number of participants responded 14 injections (31.9%) followed by 7 injections (15.2%) and 5 injections (19.4%) respectively of antirabies vaccine. Pawan Parashar et al[8] in their study, observed that Knowledge regarding the number of antirabies vaccines (ARV) to be taken following animal bite/ exposure was poor and only 30.13% knew that 05 doses of Anti Rabies Vaccine (ARV) for prevention against rabies is required and majority (46.66%) opined that 14 injections (ARV) have to be taken .

Praveen G, et al[7] in their study observed that, 15 (16.6%) students knew that 5 doses of vaccine should be taken when bitten by animal. Knowledge of the study subjects about the site of administration for the vaccine revealed that majority felt that, site of vaccination is to be given on abdomen74 (56.49%) followed by buttock 11(8.40%), shoulder 16(12.21%), thigh 9 (6.87%) and 51(38.93%) participants don't know the site of vaccination respectively. Smita S. Valekar et al[9]in their study found that site of vaccination was abdomen in 91 subjects (65%) followed by buttocks (22,15.9%), shoulder (18,13.04%) and thigh (2,1.4%) respectively. Five subjects (3.6%) were not aware of site of vaccine administration. Pawan Parashar et al[8] in their study, observed that, 220 (50.66%)

students still believed that anti rabies vaccines are given around the umbilicus. Very few (09.06%) students knew that anti rabies vaccines should be given over arm/ anterolateral of thigh. 92(24.53%) students do not know site of injection.

Conclusion

Majority of the MBBS students of the first year knew that rabies is caused by virus and transmitted through dog bite.113(86%) students knew about symptoms and post exposure measures correctly. Students had poor knowledge about the other modes of transmission, other animals that can transmit rabies, and number of Vaccine doses. 88(67.71%) participants were aware about the availability of Anti Rabies vaccines in private/ Government hospitals and 34(25.95%) students were aware that dog bite wound should be washed with soap and water.

Majority of study participants felt that 14 doses are required for complete vaccination.

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