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Original Research Article

A cross sectional study to assess awareness regarding rabies amongst medical students of Rajindra hospital, Patiala, Punjab

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ABSTRACT

Background: Rabies is a preventable enzootic endemic disease in India, it is a viral disease caused by Lysavirus causing acute inflammation of brain in humans and other warm blooded animals. It is typically transmitted through bites from infected animal. Human rabies deaths are almost entirely preventable through prompt delivery of post-exposure prophylaxis (PEP) to victims of bites by rabid animal. Appropriate knowledge regarding rabies and its prevention among medical students is very important to prevent rabies deaths. The aims and objectives of the study were to assess awareness regarding rabies amongst medical students.
Methods: This was a cross sectional study which was conducted in month of April 2018. There were total of 496 students, we could obtain the information from 373 students as the questionnaire was given during a theory class and some of the students were absent. A pretested, structured questionnaire was administered to assess their knowledge about rabies, classification and management of bite wounds, including different vaccination schedules, site and dose. The data was entered using Microsoft excel and statically analysed by Epi Info 7.
Results: Almost all (97.32%) students knew that rabies is a fatal disease and 78.02% knew that dog was the primary transmitting animal. Only 41.29% students were aware that head, neck and face to be the danger site of bite. Almost all 98.6% students were aware about washing the wound with soap and water as the primary first aid measure following dog bite whereas 0.27% said suturing as first aid measure.
Conclusions: Awareness of medical students regarding cause of rabies and its fatality were good but they had less awareness about the danger sites of animal bite.

Keywords: Rabies, Medical students, Animal bite

INTRODUCTION

Rabies (Rages or madness in Latin), a preventable enzootic endemic disease in India, is a viral disease caused by Lysavirus causing acute inflammation of brain in humans and other warm blooded animals.[1,2] It is typically transmitted through bites from infected animal. The disease affects domestic as well as wild animals and is spread to people through infective material, usually saliva, via bites and scratches.[3] Rabies is estimated to cause 59 000 human deaths annually in over 150 countries, with 95% of cases occurring in Africa and Asia. India accounts for 59.9% of rabies deaths in Asia and 35% of deaths globally.[4] Community awareness on all aspects of rabies is generally lacking viz. first aid, management of animal bites, pre & post exposure prophylaxis etc.[5] There are many myths and false belief associated with wound management, these include application of oils, herbs, and red chilies on wound inflicted by rabid animals, and not washing the wound

properly.[6] Human rabies deaths are almost entirely preventable through prompt delivery of post-exposure prophylaxis (PEP) to victims of bites by rabid animal.[7,8] A WHO report on the animal experiments shown that the local wound treatment tends to reduce rabies incidence up to 80%.[9] Medical professionals should have adequate knowledge related to the cause and the preventive measures of rabies to avoid the disease.[3] Medical students are the physicians of the future, so appropriate knowledge regarding rabies and its prevention among them is very important to prevent rabies deaths.[10] The present study was undertaken to identify the awareness regarding animal bite management and pre and post exposure prophylaxis including vaccination among medical students (new final and old final year).

Aims/objectives

Aim of the study was to assess awareness regarding Rabies amongst medical students.

METHODS

A cross sectional study was conducted in month of April 2018 among new final and old final students (MBBS) of government medical college, Patiala. There were total of 496 students, we could obtain the information from 373 students as the questionnaire was given during a theory class and some of the students were absent. Staff of Community Medicine department helped in invigilating the session and use of mobile phone was restricted during session. After 15 minutes the proforma were collected for analysis. Informed consent from the students was taken before hand. A pretested, structured questionnaire was administered to assess their knowledge about rabies, classification and management of bite wounds, including different vaccination schedules, site and dose. The data was entered using Microsoft excel and statically analysed by Epi Info 7 results obtained were expressed in terms of percentages and proportions.

RESULTS

In present study out of the total 373 students interviewed 211 were females and 161 were males. Most of the students were in age group of 20-25 years with mean age of 21.22 years (with range from 19 to 26 years). Around all (99.5%) of the students knew about the viral cause of rabies and only 2 student each said bacteria as the other answer. Almost all (97.32%) students knew that rabies is a fatal disease. More than three fourth (78.02%) knew that dog was the primary transmitting animal whereas 21.18% said animals such as cat, monkey, cow etc may be the cause of rabies. Table 1 shows that 87.40% students said that rabies was caused by bites, licking and scratches of rabid animal. About the symptom of rabies in humans 95.17% said hydrophobia, fever, convulsions and paraesthesia and 1.88% said in addition to above seizures and paralysis also as symptoms whereas. Less than half (41.29%) students were aware that head, neck, and face to be the danger site of bite whereas 52.01% said lower limbs to be danger sites of bite and 3.22% areas other than head neck and face to be danger site and 3.49% had no knowledge off danger site Figure 1.

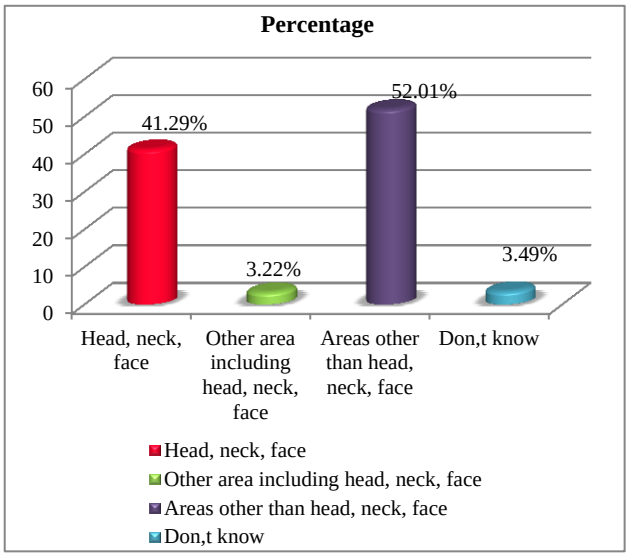

Figure 1: Awareness regarding danger sites of animal bite for rabies.

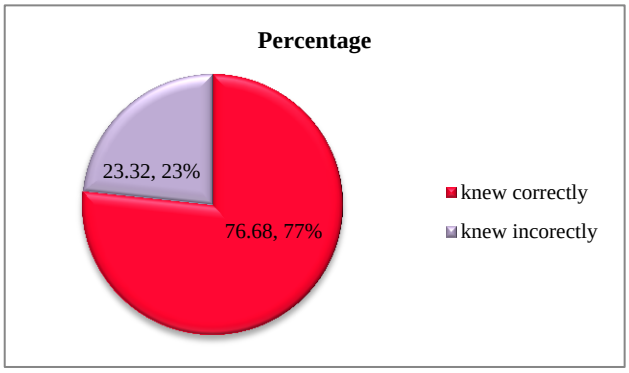

Figure 2: Awareness regarding schedule and number of I.m. vaccine.

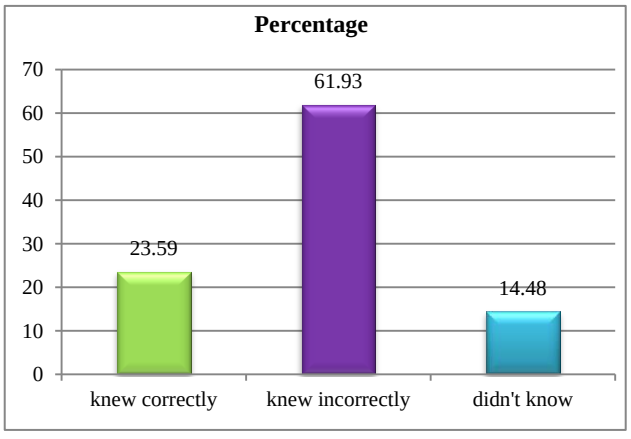

Figure 3: Awareness regarding incubation period of rabies in man.

Table 1: Awareness regarding rabies amongst medical students.

Variables	Answers	Percentage (%)
Causative agent of rabies	Virus	99.46
	Bacteria	0.27
	Others	0.27
Whether rabies is a fatal disease	Yes	97.32
	No	1.61
	Don't know	1.07
Transmitting animals	Dogs	78.02
	Dogs and other animals(cat, monkey, cow)	21.18
	Animals other than dogs	0.80
Mode of transmission	Bite	11.53
	Bite, Licking and Scratch	87.40
	Licking and scratch	0.27
	Don't know	0.80
Symptoms of rabies in man	Hydrophobia, convulsion, parasthesia, fever	95.17
	Hydrophobia, convulsion, parasthesia, fever,seizure and paralysis	1.88
	Other symptoms including Hydrophobia, convulsion, parasthesia, fever	1.07
	Only seizure and paralysis	0.80
	Only Dementia, behaving like a dog	0.80
	Don't know	0.27
Danger sites of rabies	Head, neck, face	41.29
	Other area including head, neck, face	3.22
	Areas other than head, neck, face	52.01
	Don’t know	3.49
Incubation period of rabies in man	20-60 days	23.59
	Other than 20-60 days	61.93
	Don't know	14.48
Period of observation in animals	7-10 days	64.88
	Other than 7-10 days	26.54
	Don't know	8.58
Causative agent	Knew correctly	99.46
	Knew incorrectly	0.27
	Didn't know	0.27
Transmitting animals	Knew correctly to be dogs and other animals	99.2
	Had a opinion that animals other than dogs	0.8
	Didn't know	0
Modes of transmission	Bites or licking or scratch	98.93
	Licking or scratch	0.27
	Didn't know	0.8
Symptoms of rabies in humans	Symptoms including hydrophobia	98.12
	Symptoms other than hydrophobia	1.61
	Didn't know	0.27
Incubation period of rabies in man	Knew correctly	23.59
	Knew incorrectly	61.93
	Didn't know	14.48
First aid following bite	Wash with soap water/ apply antiseptic	98.4
	Suture or bandage wound	0.27
	Apply haldi/ surma/ dressing/ chillies	0.27
	All of these	1.06
Schedule and number of I.m. vaccine	Knew correctly	76.68
	Knew incorrectly	23.32
	Didn't know	0

Continued.

Variables	Answers	Percentage (%)
Schedule and number of I.d. vaccine	Knew correctly	39.14
	Knew incorrectly	60.86
	Didn't know	0
Causative agent	Knew correctly	99.46
	Knew incorrectly	0.27
	Didn't know	0.27
Transmitting animals	Knew correctly to be dogs and other animals	99.2
	Had a opinion that animals other than dogs	0.8
	Didn't know	0
Modes of transmission	Bites or licking or scratch	98.93
	Licking or scratch	0.27
	Didn't know	0.8
Symptoms of rabies in humans	Symptoms including hydrophobia	98.12
	Symptoms other than hydrophobia	1.61
	Didn't know	0.27
Incubation period of rabies in man	Knew correctly	23.59
	Knew incorrectly	61.93
	Didn't know	14.48
First aid following bite	Wash with soap water/ apply aniseptic	98.4
	Suture or bandage wound	0.27
	Apply haldi/ surma/ dressing/ chillies	0.27
	All of these	1.06
Schedule and number of I.m. vaccine	Knew correctly	76.68
	Knew incorrectly	23.32
	Didn't know	0
Schedule and number of I.d. vaccine	Knew correctly	39.14
	Knew incorrectly	60.86
	Didn't know	0

In the present study 23.6% correctly know about the incubation period of rabies in humans Figure 2. Regarding incubation period in animals 64.88% said it to be 7-10 days. Almost all 98.6% students were aware about washing the wound with soap and water as the primary first aid measure following dog bite whereas 0.27% said suturing as first aid measure and 0.27% said applying haldi/surmsa/chillies as first aid following bite and 1.07% said all of the above as the first aid following bite. Around 76.68% students knew correctly regarding Schedule and number of I.m. vaccine Figure 3.

Only 78.01% knew about both intradermal and intra-muscular schedule of vaccination. Nearly 48.2% knew deltoid region as site of vaccination only 2.14% said deltoid and anterolateral aspect of thigh as site of choice whereas 16.6% said gluteal region to be site of vaccination and another 0.53% said all as site of vaccination whereas 7.77% had no knowledge about site of vaccination. Most of the students 79.6% knew that there are 3 categories of bite. Around 70.77% students said category 3 bite as indication of ARS and 29.33% were not aware regarding indication for ARS. Only 43.6% knew about the duration in which ARS can be given in the present study 94.01% thought that vaccination of dogs is important only 12.8% said that it was mouse brain derived vaccine and most of them 88.2%were not aware about the type of vaccine it is. On the total number of doses of vaccine required 68.0% said to be 5 doses and 22.5% said it to be 4 whereas 6.97% said 7 as answer and another 2.41% said it to be 14. Around 37% said that pregnancy was a contraindication for rabies vaccination whereas 36.1% said it was not a contraindication and 27.07% did not know the answer.

DISCUSSION

Rabies is a vaccine preventable viral disease and a serious public health problem. A thorough knowledge regarding the management of animal bites and rabies vaccination is a must for all physicians, in order to prevent the development of human rabies. Medical students are the physicians of the future, so appropriate knowledge regarding rabies and its prevention among them is very important to prevent rabies deaths. Awareness of Health professional's is a major determinant of appropriate treatment for patients. Several studies revealed that the awareness regarding rabies and its prevention among health care providers was not adequate. The present study revealed that awareness of medical students regarding some aspects of epidemiology of rabies was good but there were certain aspects where awareness is very less. In the present study around all (99.5%) of the medical students knew about the viral

cause of rabies and almost all (97.32%) students knew that rabies is a fatal disease. Almost all 99.2% knew correctly to be dogs and other animals as rabies transmitting animal. Similar findings were observed by Mishra and Anjana.[3,10] Transmission of rabies occur following a deep bite or scratch from an animal with rabies. In current study 87.40% medical students were aware about the transmission of rabies through deep bite and scratches these findings are comparable to other studies.[10] Mali observed 89.33%students were aware about mode of transmission of rabies.[2] In the present study 41.29% students respond that head, neck and face to be the danger site of bite. Almost all 98.6% students were aware about washing the wound immediately with soap and water as the primary first aid measure following animal bite. The awareness regarding wound care was more in our study as compare to other studies. This is because visits of students to anti rabies clinic during their field postings. In present study only 78.01% knew about both intradermal and intramuscular schedule of vaccination. Nearly 48.2% knew deltoid region as site of vaccination only 2.14% said deltoid and anterolateral aspect of thigh as site of choice. Anjana observed that only 72.2% students were aware about proper wound care and only 10.4% students are aware about the correct sites of vaccination.[10] In our study only 39.14% students were aware about Schedule and number of I.d. vaccine and 76.68% knew about Schedule and number of I.m. vaccine. Similar findings were observed by Anjana (43.7%), Mali N (43.33%).[2,10]

CONCLUSION

Awareness of medical students is a major determinant of appropriate treatment for patients in future. This study highlighted that awareness regarding rabies is inadequate in second year students of the medical college. Awareness of medical students regarding cause of rabies and its fatality were good but they had less awareness about the danger sites of animal bite and intradermal schedule and number of vaccines.

Recommendations

There is an essential need for generating awareness about rabies and animal bite among medical students. There is a need to organize re-orientation programs and continuing medical education (CME) sessions for medical students regarding rabies and its prevention on a regular basis. There should be interactive animal bite clinic visits for students and regular postings to anti rabies clinic of interns to address specific knowledge gaps. Timely quiz competitions and poster competitions for improve awareness for rabies prevention also should be organised to create awareness regarding rabies.

Limitations

This study may be helpful in creating an awareness regarding animal bite and rabies. The study was confined to a small number of subjects, which resulted in reduced power in statistical analysis. No standardized tools were available; therefore a tool was prepared for the purpose of this study. This study took place in tertiary care hospitals, and the results of the study cannot be generalized at the country level. Our study was done with small sample size and better study can be planned with more sample size. Future study can be planned with involving doctors, students and other healthcare workers.

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