



ASSESSMENT OF KNOWLEDGE REGARDING RABIES AND ITS PREVENTION AMONG THE MEDICAL STUDENTS OF GOVERNMENT MEDICAL COLLEGE, NALHAR, NUH

Microbiology

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ABSTRACT

Introduction : Rabies is a viral zoonotic disease with 100% fatality. Being a 100% preventable disease, it becomes imperative that the health care professionals including students pursuing MBBS course have an appropriate knowledge about the animal bite and prevention of rabies and be better equipped to tackle the menace more efficiently.

This study has been done to assess the knowledge and level of awareness regarding transmission, clinical sign and symptom, preventive measures, post prophylaxis wound management and use of RIG among 2nd year MBBS students of Shaheed Hasan Khan Mewati Government Medical College, Nalhar, Nuh post awareness session in the form of didactic lecture.

Material And Methods: An observational study was conducted among the 2nd year MBBS students of SHKM GMC, Nalhar, Nuh in September 2019. A total of 83 participants were included in the study. Data was collected using performed questionnaire and analyzed using percentage method.

Results: It was seen that the majority (74.69%) of medical students knew about the most common method of transmission of rabies virus by bites of rabid animal. About 83.13% of medical students knew hydrophobia as the symptom of rabies in human. Only 21.68% of students were aware of the fact that bite wound should not be cauterized while 10.84% of students knew the correct site of administration of RIG.

Conclusion : Our study found most of the students were aware of the mode of transmission and clinical symptoms of rabies but few could correctly mention the fact about cauterization and correct site of administration of RIG. It is recommended that continuing medical education (CME) sessions on prevention and management of rabies for medical students be conducted regularly for better patient handling and management.

KEYWORDS

Awareness, Medical students, Rabies.

INTRODUCTION :

Rabies is a highly fatal still completely preventable acute viral disease of the central nervous system that causes fatal encephalomyelitis in virtually all warm-blooded animals including humans.¹ The causative agent belongs to the genus *Lyssavirus* of the family *Rhabdoviridae*.² Every year, more than 15 million people worldwide receive a post-exposure vaccination to prevent the disease-this is estimated to prevent hundreds of thousands of rabies deaths annually.³ Still, rabies is the 10th biggest cause of death due to infectious diseases worldwide.⁴ Rabies causes about 26,000 to 55,000 deaths worldwide per year, more than 95% of which occur in Asia and Africa.⁵ Approximately 65,000 people across the globe and 20,000 people in India die of rabies every year, making India the country with the highest rabies fatalities in Asia and the second highest in the world.⁶ Based on available evidence, a fair estimate of rabies burden in India is 2.74 rabies cases per 100,000 population annually.⁴ In India, the burden is unevenly distributed among different states. A major determining factor for the appropriate treatment of patients is a health professional's knowledge. Studies have revealed that the knowledge regarding rabies and its prevention was not adequate among health care providers.⁸⁻¹¹ To prevent rabies deaths, appropriate knowledge regarding rabies and its prevention among the medical students is very important as they are the physicians of the future.¹² Keeping in view the above points, the present study was designed to assess the knowledge regarding rabies and its prevention among the second year MBBS students.

MATERIAL AND METHODS:

The present observational study was conducted among 83 medical students of 2nd prof. MBBS Shaheed Hasan Khan Mewati Government Medical college, Nalhar, Nuh in the month of September, 2019. Informed consent was obtained from each participant. A pre designed and pre tested proforma was distributed among the medical students and collected data will be entered in Microsoft excel sheet and analysed by using descriptive statistics (percentage method).

RESULTS:

Fig :1 Responses In Percentage Regarding Mode Of Transmission, Major Symptom And Incubation Period

I. Mode of transmission	Percentage
Dog bite only	0

Bites of Dog, Cat, Bat	21.68 %
Animal bite, contact with infected saliva	74.69 %
II. Major symptom	
Hydrophobia (Correct)	83.13%
Photophobia	09.63%
Dehydration	01.2%
Don't know	02.4%
III. Incubation Period	
1-3 months (Correct)	68.67%
6-9 months	7.22%
One year	2.4%
None of the above	10.84%

Out of the 83 medical students interviewed, 61.44% were males, 21.68% were females. In the present study it was found that majority (74.69%) of the students had the knowledge regarding mode of transmission other than bite, 21.68% of the students opined bites of animals only as the correct mode of transmission. More than three-fourth (83.13%) of the students knew hydrophobia as a major symptom of rabies in human. About two-third (68.67%) of the students knew the correct incubation period of rabies in man while as much as 86.74% of the students knew about the observation period to animal after animal bite [Fig 1].

While very few students (15.66% and 21.68% respectively) could correctly categorise, majority (84.33% and 78.31% respectively) failed to categorise licks over the broken skin as Category 3 and contamination of mucous membrane with saliva as Category 3. Majority (81.9%) of the students correctly pointed out that rabies is not transmitted by bats. 54.21% of the medical students knew about the reservoir of rabies infection. Nearly two-third (65%) of the medical students knew that wound should not be dressed. However only 21.68% of the medical students knew that wound should not be cauterized and 36.14% of the medical students had the correct knowledge regarding the duration of washing the wound with water [Fig 2].

Fig:2 Responses In Percentage Regarding Knowledge About Rabies

I. Mode of transmission	Nos. (Percentage)
Correct	68 (81.9%)

Incorrect	14 (16.86%)
II. Dressing of bite wound	
Yes	23 (27.21%)
No (Correct)	54 (65%)
Don't know	3 (3.61%)
III. Cauterization	
Yes	38 (45.78%)
No (Correct)	18 (21.68%)
Don't know	17 (20.48%)
IV. Duration of washing of wound	
10-15 mins (Correct)	30 (36.14%)
15-20 mins	28 (33.73%)
5-10 mins	14 (16.86%)
V. Licks over broken skin	
Category III(correct)	14 (16.86%)
Category II	43 (51.80%)
Category I	06 (07.22%)
Don't Know	11 (13.25%)
Didn't answer	10 (12.04%)
VI. Contamination Of Mucous Membrane	
Category I	19 (22.85%)
Category II	28 (33.73%)
Category III (Correct)	18 (21.68%)
VII. Skin sensitivity for Equine RIG	
Decrease dose of ERIG	06 (7.12%)
Change over to other schedule of t/t	05 (6%)
Switch to HRIG (Correct)	50 (60.24%)
Don't know	12 (14.45%)
VIII. Dosage of Anti Rabies Vaccine In Infants	
Half the adult dose	30 (36.14%)
Same as adult dose (Correct)	31 (37.34%)
More than adult dose	09 (10.84%)
Didn't answer	12 (14.45%)
IX. Reservoir of Rabies Virus	
Correct	45 (54.21%)
Incorrect	32 (38.55%)
Didn't answer	6 (7.2%)
X. Is Rabies a notifiable disease in India?	
Yes	47 (56.62%)
No (Correct)	13 (15.66%)
Don't know	19 (22.89%)
Didn't answer	04 (4.8%)

More than two- third (69.87%) of the medical students knew the correct site for administration of rabies vaccine while only 10.84% of the students had the knowledge about the correct site of administration of rabies immunoglobulin. The correct dosage schedule of intramuscular vaccine administration was identified by 46.98% of the medical students (Fig 3) while the knowledge about correct dosage schedule of Equine Rabies Immunoglobulin (RIG) and Human RIG was present in 42.16% of the students (Fig 4). While 60.24% of the medical students knew about the alternative treatment for patients who are sensitive to Equine RIG, only one-third (37.34%) of the students were aware of the correct dosage of anti-rabies vaccine in infants. Only 15.66% of the medical students had the knowledge that rabies is not a notifiable disease in India. [Fig 2]

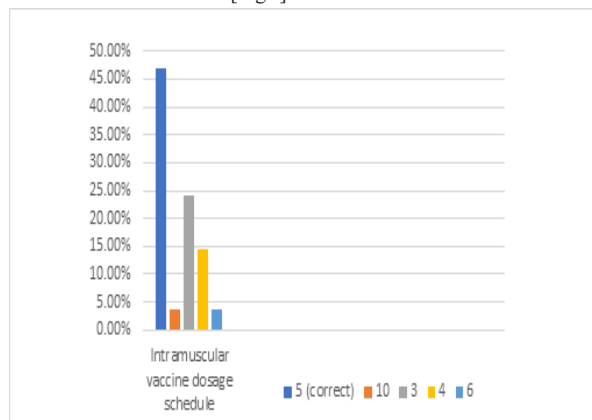


Fig: 3 Responses Regarding Intramuscular Dosage Schedule :

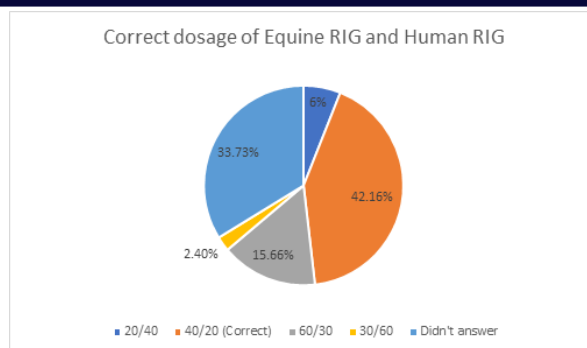


Fig: 4 Responses Regarding Correct Dosage Of Equine RIG And Human RIG

DISCUSSION:

In our study, nearly 63.85% of the students were males which is similar to study done by Sk Shashikantha et al where 62% of the students were males.¹³ More than 3/4th (83.13%) of the students knew hydrophobia as a major symptom of rabies in human which is almost close to a study done by Tiwari A where 74.3% of medical students knew hydrophobia as a symptom of rabies in human.¹²

Nearly 74.69% of the students in our study knew mode of transmission of the virus which is near to a study done in 2007 in Udaipur by Mali A et al where 89.33% of the students had knowledge regarding the mode of transmission.⁷

About 2/3rd (68.67%) of the students had knowledge regarding the incubation period while as much as 86.74% of the students knew about the observation period to animal after animal bite which is much better than a study done in 2007 in Chhattisgarh by Tiwari A where only 45.9% of the medical students knew about the incubation period of rabies and 24% knew about the period of observation to animal after animal bite, correctly.¹² A study done by Singh et al and Chopra et al reported that 75.5% of MBBS doctors knew the correct incubation period of rabies while 95.5% of MBBS doctors knew about the correct period of observation to animal following animal bite.^{14,15}

Current study revealed that 65% of the medical students knew that wound should not be dressed or covered. In contrast, a study done by Tiwari A revealed a much better percentage (85.8%) of students having correct knowledge regarding dressing of wound.¹² In another study done by Bhalla et al among the general practitioners of Jamnagar city, revealed that 36% of the general practitioners had incorrect knowledge regarding dressing of wound.¹⁶

Regarding cauterisation of wound, our study revealed slightly better percentage (21.68%) of students having proper knowledge than a study done in Udaipur in 2017 by Mali A et al among the second year MBBS students where it was found to be 16%.⁷ In contrast, a study done in Jamnagar, Gujarat by Amrita S et al among the interns and final year students, found a much higher percentage (72%) of students and interns having proper knowledge regarding cauterisation of wound.¹⁷

In our study, 36.14% of the students had correct knowledge regarding washing of the wound with soap and water. In contrast, study done in Bijapur by SK Shashikantha et al revealed 52% of the medical students were in favour of immediate washing of wound with soap and water while a study done in Gujarat by Amrita S et al in 2013 found as much as 92% of the students were in favour of immediate washing of wound.^{13,17}

In our study, 54.21% of the students knew about the reservoir of rabies infection which is almost similar to a study done in Gujarat by Amrita S where they found 54% of the students having correct knowledge about the reservoir of rabies infection.¹⁷

Our study revealed 15.66% of the students correctly categorising 'licks over broken skin' as Category 3 which is quite lower than the percentage (36%) found out in a study done by Amrita S et al and study done by Chowdhury et al where the percentage was 27.5%. However, the percentage got slightly better in our study (21.68%) when students were asked to categorise contamination of mucous membrane with saliva. In comparison, the percentage was much higher (75%) in a

study done by Chowdhury et al while in a study done by Amrita S et al, knowledge regarding categorisation of the wound was much poor (3%).^{17,18}

More than 2/3rd (69.87%) of medical students knew the correct site of administration of rabies vaccine which is slightly better than a study done in Gujarat by Amrita S in 2013 among interns and final year students where the percentage was found to be 66%.¹⁷ A study done by Tiwari A revealed a slightly higher percentage (71%) of the students having correct knowledge about it.¹² Another study done in Jamnagar city by Bhalla S among the general practitioners found only 44% of them were aware about the correct site of administration of vaccine.¹⁶

The correct dosage schedule of IM vaccine administration was identified by 46.98% of the students which is similar to a study done by Tiwari A where 43.7% of students knew about it. In another study done among the general practitioners by Bhalla et al revealed only 24% of them knew the correct schedule of post exposure prophylaxis.^{12,16}

Around 42.16% of students had correct knowledge about the dosage schedule of Equine Rabies Immunoglobulin (RIG) and Human RIG. In contrast, a study done by SK Shashikantha et al, 41.3% of students had proper knowledge regarding Human RIG which is almost similar to our study while the percentage (15%) of responses for Equine RIG was quite low in comparison to our study.¹³ A study done by Praveen G et al among the medical students of Hassan Institute of Medical Sciences in Hassan, Karnataka, found only 2.2% of the students were aware of RIG.¹⁹

In our study, only 14.45% of students knew about the no. of doses for the IM regimen of post exposure prophylaxis which is similar to a study done by Praveen G et al where 16.6% of students knew about it.¹⁹

CONCLUSION:

Our study highlighted that majority of the students had knowledge regarding the major symptom of rabies (83.13%) and were also aware about the observation period to animal (86.16%). However only 15.66% of the students knew about the correct categorisation and only 10.84% of the students had proper knowledge regarding the correct site of administration of rabies immunoglobulin. Majority of the students had theoretical knowledge about rabies whereas they were not properly oriented towards the practical approach of the disease.

Since Rabies is a 100% fatal disease as well as completely preventable, it is very essential for the doctors to have a proper knowledge about the disease and its management. These students are the future doctors who will be dealing with animal bites cases, be it in a tertiary hospital or at a primary healthcare centre and this lack of knowledge among them can lead to loss of lives.

So, in order to reduce the mortality rate due to ignorance of the doctors, regular visit of the students to the animal bite clinics and having interactive sessions should be arranged. Seminars and workshops on rabies disease and its management should be held at regular intervals to keep the students updated, refresh their knowledge and to address specific knowledge gaps.

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