



An assessment of Knowledge of Prevention and Management of Rabies in Second Year MBBS Students of American International Institute of Medical Sciences, Udaipur (Rajasthan)

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ABSTRACT

Background: Rabies is a viral zoonotic disease and human infection usually occurs following transdermal bite or scratch by an infected animal. It is one of the most dangerous, fatal and completely preventable disease.

Objectives: The main objective of present research is to assess the knowledge regarding preventive measures, wound management of Rabies.

Methods: A cross sectional study conducted in November 2017 to December 2017. Data was collected by using questionnaire from undergraduate 150 students studying in second MBBS at AIIMS medical college, Udaipur (Rajasthan) India. Data was entered and analyzed using SPSS V.17. Descriptive statistics and chi-square test were applied. KAP score were calculated. $p < 0.05$ was considered statistically significant.

Results: In our study 56.67% agreed that pre-exposure vaccination was useful. 60% were male and 40% were female. 62.66% among them had poor KAP score. KAP score associated with sex, native place and history of animal bite.

Conclusion: The study shows that subjects had poor knowledge about preventive practice for pre-exposure vaccination of animal bite and rabies in the study population which needs to overcome immediately with proper training for vaccination in pre-exposure profile excess.

Key Words: Post exposure prophylaxis, Infection, Zoonotic disease, Fatal

INTRODUCTION

Rabies is a viral zoonosis and human infection usually occurs following a transdermal bite or scratch by infected animal.¹ The clinical signs in dogs include sudden behavioral changes, hyper salivation, paralysis, hydro and photophobia, restlessness, aggressiveness and biting inanimate objects.² Rabies causes about 26,000 to 55,000 deaths worldwide per year, more than 95% of which occur in Asia and Africa.³ Every year, more than 15 million people worldwide receive a post-exposure vaccination to prevent the Rabies. We have to prevent hundreds of thousands of rabies death annually.⁴

Still, rabies is the 10th biggest cause of death due to infectious diseases worldwide.⁵

About 98% of the human rabies cases occur in developing countries that possess large number of dogs, many of which are stray. Rabies is 100% fatal disease which can be prevented by timely and appropriate anti rabies prophylaxis. Earlier many studies have been done on medical students health care veterinary personals and animal bite victims.⁶⁻⁹ The present study was under taken among second year MBBS students in AIIMS medical college, Udaipur.

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Based on available evidence, a fair estimate of rabies burden in India is 2.74 rabies cases/100,000 populations annually.⁵ In India, the burden is unevenly distributed among different States.

Objectives

To assess the knowledge and preventive measures regarding rabies among second year MBBS medical students.

MATERIAL AND METHODS

A cross-sectional study was conducted in November 2017 to December 2017 among 150 second year students of American International Institute of medical sciences, Udaipur (Rajasthan). There is no awareness of study about rabies and prevention among second year MBBS students so by considering 95% confidence interval sample size calculated is 150.

Data was collected once in a week, each week around 20-25 students were interviewed randomly, so by 8 weeks end total sample size we have got is 150. Data was collected using a semi structured, pre-designed interview method. The method consisted of questions regarding knowledge, attitude and practice of animal bite and rabies. Proper verbal consent was taken before filling out the questionnaire.

Data analysis was done in department of community medicine by using SPSS version 17. Percentages and chi square test were applied to test association between categorical variables. KAP (knowledge, attitude and practice) scores were calculated as below

KAP scoring: 20 questions were asked for each participant regarding cause, sources and mode of transmissions, clinical features, pre-exposure prophylaxis and prevention practices and treatment measures of rabies which was resulted in a response of either, choose the correct answer (had got one mark) or wrong answer (had got zero mark) for each question. The mean scores were calculated for KAP.

The participants who had KAP score more than mean were considered as good and less than mean was considered as poor. Good knowledge was defined as those getting a score of 9 and above, poor knowledge as getting a score less than 9. The data show that majority of study participants were having poor KAP level.

RESULTS

From 150 study population 56 (37.33%) had good KAP whereas 94 (62.67%) had poor KAP about the prevention of Rabies and its treatment protocols.

Table 1: Distribution of subjects according to their knowledge about rabies (n =150)

Characteristics	Yes		No	
	No.	%	No.	%
Heard of the disease	150	100	0	0
Mode of transmissions (bites, licks, scratches of infected animal)	134	89.33	16	10.67
Reservoir of infection (dog & other animal)	90	60	60	40
Causative agents	140	93.33	10	6.67
Mode of spread	143	95.33	7	4.67
Other mode of spread (organ transplant etc.)	8	5.33	142	94.67
Clinical feature of rabies in animals	125	83.33	25	16.67
Clinical feature of rabies in human	113	75.33	37	24.67
Incubation period	58	38.67	92	61.33

Table 1 - 100% of the participants were familiar with the disease. In our study majority of the subjects 89.33% knew the mode of transmissions are bites, licks and scratches by infected animal. It was seen that 60% of the participants knew about other animal like bats, Jackals, pigs, mongoose, cat etc. as reservoirs. 93.33% were aware that infection was the cause of Rabies and 95.33% knew that rabies was transmitted from animal to human. 5.33% thought infection can spread by organ transplant and 83.33% could identify clinical feature of rabies in animal. 24.67% of the participants were not aware about clinical features of Rabies in humans. 38.67% of the participants correctly answered about the incubation period.

Table - 2 36.67% of participants had proper knowledge about first aid after bite. Only 43.33% responded for full course of vaccination. 66.67% were aware about anti rabies immune globulin whereas 43.33% had no idea about pre-exposure prophylaxis.

Table 2: Knowledge of study participants regarding prevention of rabies: (n=150)

Characteristics	Yes		No	
	No.	%	No.	%
Proper knowledge about first aid after bite	55	36.67	95	63.33
Vaccination of human	110	73.33	40	26.67
Full course of vaccination	65	43.33	85	56.67
About anti rabies immune globulin	100	66.67	50	33.33

About pre-exposure prophylaxis	85	56.67	65	43.33
Vaccination of dogs	97	64.67	53	35.33
Aware of prevention by educating people about the pre and post exposure	94	62.67	56	37.33

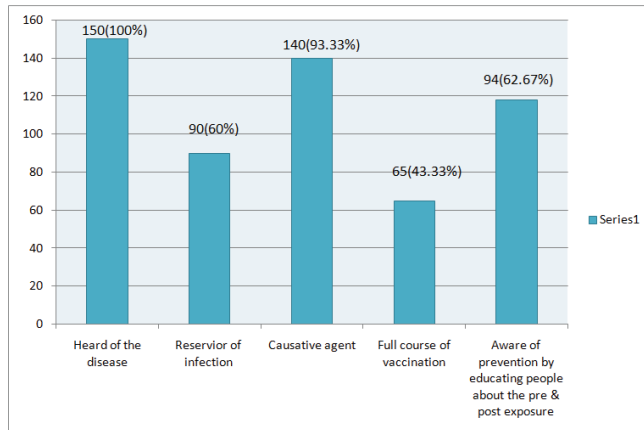


Figure 1: Frequencies and percentage of knowledge and prevention regarding rabies.

Table 3: Knowledge of subjects regarding wound care management (n=150)

Responses	Yes		No	
	No.	%	No.	%
Immediate wash	146	97.33	4	2.67
Antiseptic application	73	48.67	77	51.33
Sutures	87	58	63	42
Cauterization	126	84	24	16

Table 4: Relationship between prevention practice scores towards rabies and some key independent variables among study respondents

Sr. no.	Variable	Good	Poor	χ^2	Df	p-value
1.	Sex					
	Male (90)	54	36	4.853	1	0.027**
	Female (60)	25	35			
2.	Native place					
	Rural (53)	22	31	11.67	1	0.000**
	Urban (97)	68	29			
3.	History of animal bite					
	Yes (68)	13	55	7.8031	1	0.005**
	No (82)	33	49			

Table-3 It shows that 97.33% participants knew for immediate wash of wound of animal bite. 48.67%, 58%, 84% of the participants correctly responded about antiseptic use, suturing and cauterization respectively.

Factors associated with preventive practice score towards rabies

Association between independent variables and KAP scores on rabies was assessed using Pearson's chi square. There was significant association between Knowledge, attitude and practice score with sex ($\chi^2=4.853$ $p<0.05$) the good scores were highest in urban native place, history of animal bite was significantly associated with knowledge and attitude scores ($\chi^2=7.8031$, $p<0.05$).

DISCUSSION

Rabies is 100% fatal zoonotic disease which can be preventable by pre and post exposure prophylaxis in the form of anti-rabies vaccination and anti-rabies serum, but once contracted the disease is invariably fatal.¹⁰ In our study 60% of study population were male and 40% females. In present study 93.33% of students were aware of the viral cause of rabies which was near to a study done by Nayak RK et al 2011 in Belgaum, India.¹¹ Similar findings were obtained in a study by Singh et al where all subjects knew about Rabies and 89.33% were aware about the transmission of rabies.⁷ However, in the present study 40% of the study subjects did not know that other animals could also transmit the disease. 16.67% of the study population did not know about the clinical features of rabies in animal, whereas hydrophobia as the presenting feature was known to majority of subjects in a study by Kishore et al.¹²

In our study the knowledge about first aid and importance of full course of vaccination after dog bite were known to 36.67% and 43.33% respectively.

In another study though majority of the subjects knew about first aid after animal bite, but they did not have the knowledge about use of anti-rabies immunoglobulin which is very essential for the management of dog bite.¹² In a study conducted by Chandan N et al, 67% of the study participants had heard about vaccination for animal bite.¹³

In our study 89.33% know about mode of transmission but only 38.67% students knew incubation period which was less in compare to a study done in Karachi in 2007 by Shah SF et al. where data was 51.7%.¹⁴ In our study, 35.33% were not aware of the vaccination of dogs and 37.33% not aware about educating people about the pre & post exposure preventive measures can prevent rabies.

In the present study, it was seen that the attitude towards wound wash for animal bite was good in more than half of

the study population and 97.33% opined that they would wash the wound. Similar findings were also obtained by Chandan et al where majority of the subjects would wash the wound with soap and water if bitten by animal.¹³ However, Ichhpujani et al in their study observed that less than 50 % were in favour of wound toileting after dog bite⁸, majority i.e. 62% said that animal bite is a serious condition and 51% were willing to go for complete vaccination. In the study by Kamble et al, 89 % of study population considered vaccination to be necessary after animal bite for rabies prevention.¹⁵ 97.33% of the participants responded regarding immediate wash, 48.67% regarding antiseptic use, 58% regarding suturing and 84% regarding cauterization. A study done in interns by Chowdhury R. et al. (2012) found that 96.2% of the participants responded regarding wound management, 77.5% regarding antiseptic use, 83.8% regarding suturing, and 75% regarding cauterization.⁵

CONCLUSION

This study highlighted that knowledge regarding a Fatal and endemic disease as rabies is inadequate in second year students of the medical college. Also, it revealed that the overall knowledge and attitude of the students regarding prevention and management was poor with inadequate variables sex, native place and history of animal bite. This implies students are lacking in practical exposure.

Animal bites cases are frequently reported at all government or private hospitals in India and this lack of knowledge among health care professionals leads to loss of several lives which could have been saved. This, most likely happens, either because the first line treatment providers are just out of medical college with no practical exposure or due to inadequate knowledge which is not in accordance with the current guidelines. So, keeping this in mind, teaching hospitals should arrange for interactive animal bite clinic visits for students and posting of interns, CMEs to address specific knowledge gaps. These would give them a practical exposure, reduce the public health burden of rabies and also reduce the health care budget on vaccines and immunoglobulin wastage resulting from improper use.

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