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A cross sectional study to assess knowledge, attitude and practices (KAP) towards animal bite management and vaccination against rabies, amongst interns in a tertiary care hospital of Kolhapur, Maharashtra

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Abstract--Background: Rabies disease continues to be most feared of all communicable diseases. Rabies is a zoonotic disease & transmitted by animal bites, mainly dogs. India accounts for 59.9% of rabies deaths in Asia and 35% of deaths globally. One of the important factors associated with successful treatment is the knowledge of the care giver in the correct management of animal bites and vaccination against rabies. Objectives: i) To assess the knowledge towards animal bite management, and (ii) To study the knowledge, attitude & practices regarding pre and post-exposure prophylaxis (PEP) of rabies amongst interns in a D. Y. Patil Medical College, & Hospital, Kolhapur, Maharashtra, a tertiary care teaching hospital. Material and Methods: i) Study design - An observational - cross sectional, knowledge, attitude & practices (KAP) study. ii) Tools used - Predesigned, pretested, structured questionnaire based survey in interns on animal bite wound management and pre & post-exposure prophylaxis for rabies. iii) Study population – Interns working in D. Y. Patil Hospital, Kolhapur during study period, iv) Statistical tests – mean, percentage and other statistical analysis was conducted by using Microsoft-Excel. Results: Total 90 interns were included in this study (52 males

and 38 females). 63 knew correct wound cleansing technique. Amongst participants, 76 study subjects knew, the management of animal bite should be started immediately. Also it was observed that 50 interns did not know that for how long rabies immunoglobulin administration can be delayed. Conclusion: Results of the study revealed that the knowledge of the interns regarding pre & post exposure prophylaxis of rabies was not adequate. Key words: Animal-bite, management, rabies, prophylaxis, vaccine, immunoglobulin

Keyword---KAP, animal bite, vaccination, rabies.

Introduction

Rabies is completely preventable communicable disease. About 563 million United States dollars are spent annually in the world on measures to prevent rabies.⁽¹⁾ An estimated 45% of all deaths from rabies occur in countries of south east Asian part of the world.⁽²⁾ The situation is especially pronounced in India, which reports about 18 000 to 20 000 cases of rabies a year and about 36% of the world's deaths from the disease.⁽³⁾ In India rabies is not a notifiable disease. Also due to underestimation or underreporting of cases, rabies incidence is constant in India.⁽⁴⁾ Lack of awareness about preventive measures, insufficient dog vaccination, uncontrolled street dogs population, inadequate knowledge about correct pre & post exposure prophylaxis about rabies vaccination in health care workers, irregular inadequate supply of anti rabies vaccine and immunoglobulin in government health care facilities are some important concerns regarding rabies control in India.

Mainly 5 to 15 years of children who belongs from lower socio economic status are affected by rabies in India. These children often play; share their home, food with street dogs. Many children attacked by dogs were unaware of having been bitten and their parents often ignored the attacks or simply treated the wounds by applying indigenous products such as hot peppers or turmeric. Only a few parents sought medical advice, usually with delay. According to one study, in India only 70% of the people have ever heard of rabies, only 30% know to wash the wounds after animal bites and, of those who get bitten, only 60% receive a modern cell-culture-derived vaccine.⁽⁵⁾ A recent report from a medical college in Kolkata showed that most medical interns were not very familiar with proper post-exposure prophylaxis because during training they saw few cases of animal bite, which were managed in other specialized hospitals.⁽⁶⁾ It is crucial to administer anti-rabies immunoglobulin immediately after a bite categorized as severe (grade III), but erroneous wound categorization by health-care providers, especially in cases presenting late for treatment, greatly increases the chances that rabies will develop.⁽⁷⁾

Intra-dermal vaccination, recommended by the World Health Organization in low-resource settings, has been practiced recently in India because of its lower cost and high immunogenicity. However, it requires special training to reduce the risk of insufficient dosing. Sometimes patients are advised to watch the offending animal for abnormal behavior for 10 days after a bite before seeking prophylactic

treatment, but because animals can be asymptomatic carriers and incubation period of rabies virus can be long from few days to many years, such delay can be risky. It would be safer to administer the complete course of anti-rabies vaccination to anyone who gets bitten by an animal.^(8,9,10)

Methodology

- **Study design** - An observational, cross sectional, Knowledge, Attitude & Practices (KAP) study.
- **Tools used** - Predesigned, pretested, structured questionnaire based survey on animal bite wound management and pre & post-exposure prophylaxis for prevention of rabies.
- **Study population** – Interns working in D. Y. Patil Hospital, Kolhapur during study period,
- **Inclusion Criteria:** Interns posted in all departments, who were working and present Hospital during study period.
- **Exclusion criteria:** Interns who were posted in the rural areas.
- **Statistical tests** – mean, percentage and other statistical analysis was conducted by using Microsoft- Excel

An observational, cross sectional, Knowledge, Attitude & Practices (KAP) study was conducted on Interns of D. Y. Patil Medical College & Hospital, Kolhapur, Maharashtra. A self administered, predesigned, pretested, structured questionnaire was given to Interns. There were total 115 interns but amongst them 25 were posted in rural areas. So only 90 interns who were working in hospital were enrolled for present study. Research tool comprised of questions about knowledge regarding animal bite management, rabies causing animals, various grades of animal bites, different regimens for anti rabies vaccine, and about anti rabies immunoglobulin. Each participant was given 20 minutes to complete the questionnaire; they were advised not to write their name on the questionnaire and were told that, their responses would remain confidential. Informed consent was taken from participants. Prior permission was taken from institutional ethical committee. The study was conducted in period between August to December 2018. Mean, Percentage and other statistical analysis was calculated using Microsoft excel.

Results

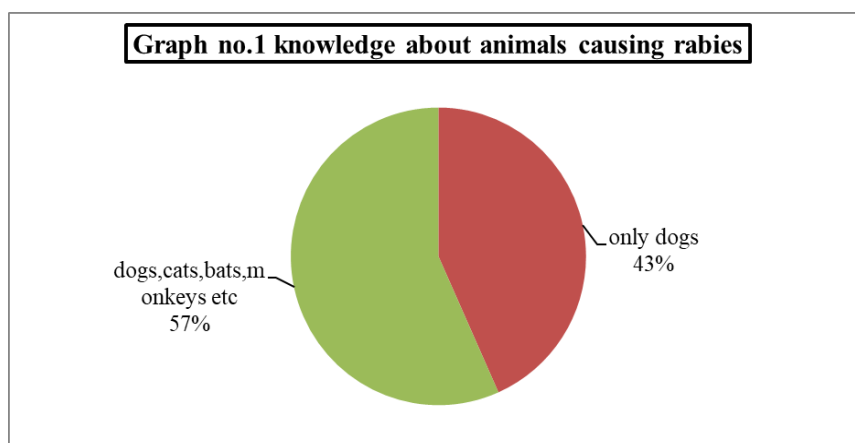
In the present study, total 90 interns were interviewed with the help of predesigned questionnaire. Amongst them, 52 (58%) were males and 38 (42%) were females. All study participants belong from age group of 23 years to 25 years (Table No.1). Only 51 (57%) participants had mentioned about all animals causing rabies (Graph no.1). Amongst study subjects, 76 (84%) said that prompt & adequate local wound treatment should be started as early as possible. 63 (70%) knew about correct wound cleansing technique with soap & water and use of virucidal agents like alcohol or povidone iodine. 49 (54%) mentioned that wound sutures should be avoided or if necessary then delayed for 1 or 2 days (Table no.2). Amongst participants, 50 (56%) did not know for how long Immunoglobulin administration can be delayed (Table No.3). 63 (70%) correctly mentioned use of only vaccine and vaccine plus Immunoglobulin as per animal bite wound

categories. 61 (68%) do not know about pre exposure rabies vaccine schedule correctly (Table No.4). Only 49 (54%) thought that vaccination of dogs against rabies was effective measure to reduce chances of rabies in humans.

Table 1
Demographic profile of participants

Age in years	Males (%)	Females (%)	Total (%)
23	12 (23)	8 (21)	20 (22)
24	36 (69)	29 (76)	65 (73)
25	4 (8)	1 (3)	5 (5)
Total	52 (100)	38 (100)	90 (100)

In the above table, out of 52 males 36 (69%) were of 24 years of age and out of 38 females 29 (76%) were of 24 years of age and total 65 (73%) were of 24 years of age.



In above graph, only 51 (57%) interns had mentioned about all animals those can cause rabies and 39 (43%) mentioned only dog bite can cause rabies in humans (Graph No.1).

Table 2
Animal bite wound management

	Frequency	Percentage (%)	Total
Start immediate treatment	76	84	90 (100%)
Correct wound care technique	63	70	90 (100%)
Avoid / Delay wound suturing	49	54	90 (100%)

In above table, 76 (84%) participants mentioned that treatment should be start immediately within minutes, rest 14 (16%) said treatment could be started whenever patient comes to hospital. 63 (70%) knew correct wound cleansing technique with soap & water and also knew about other virucidal agents like alcohol and povidone iodine. Only 49 (54%) interns told that wound suturing

should be avoided and if necessary then delayed for 1 or 2 days.

Table 3
Immunoglobulin administration time along with anti rabies vaccine in Category 3 wounds

	Frequency	Percentage (%)
Did not know	50	56
Given immediately	30	33
Can be delayed up to 3 days	8	9
Can be delayed up to 7 days	2	2
Total	90	100

In above table, it was observed that 50 (56%) interns did not know about when to administer Immunoglobulin along with anti rabies vaccine in category 3 wounds. 30 (33%) said it should be given immediately, 8 (9%) told it can be administered within 3 days whereas only 2 (2%) mentioned correct answer that was it can be delayed up to 7 days.

Table 4
Correct knowledge about anti rabies vaccine, immunoglobulin and pre exposure prophylaxis schedule

Knew Correct use of anti rabies vaccine and Immunoglobulin as per wound categories	Frequency	Percentage (%)
Yes	64	71
No	26	29
Knew about Pre exposure anti rabies vaccination Correctly		
Yes	29	32
No	61	68

In table no. 4, amongst study participants 64 (71%) had correct knowledge about anti rabies vaccine & immunoglobulin and 26 (29%) had not. Whereas 61 (68%) do not knew correct pre exposure anti rabies vaccine schedule and only 29 (32%) knew it correctly.

Discussion

In the present study, 57% participants had mentioned about all animals causing rabies. 84% said that prompt & adequate local wound treatment should be started as early as possible. 70% knew about correct wound cleansing technique with soap & water and use of virucidal agents like alcohol or povidone iodine. 54% mentioned that wound sutures should be avoided or if necessary then delayed for 1 or 2 days. 70% correctly mentioned use of only vaccine and vaccine plus Immunoglobulin as per animal bite wound categories. Amongst participants, 56% did not know for how long Immunoglobulin administration can be delayed. 54% knew that vaccination of dogs against rabies was effective measure to reduce chances of rabies in humans. In a similar study conducted at Geetanjali Medical

College (Udaipur), 64% interns know about rabies caused by rabid carnivores bite like dogs, jackal, panther etc., but 32% of interns fill the answer of only dog bites could cause rabies., 31% of interns knows about the exact doses of vaccination and serum/immunoglobulin on the other hand 83% of interns know the correct schedule of vaccination. Similarly, 69% of interns know correctly that anti-rabies serum and immunoglobulin are used in category III bites. 92% knew about pre exposure vaccination is preventive from rabies. Similarly on the wound care management 94% knows the immediate wash of the wound is necessary. 76% knows about do not suture the wound immediately. 75% knows about vaccination of dogs could prevent rabies. ⁽¹¹⁾

In another study at Shri M.P. SHAH Medical College, Jamnagar (Gujarat), 54% interns were aware that rabies can be caused by animals other than dog. 86% interns were aware of primary immediate wound care after dog bite (wash with water and soap). In the knowledge regarding wound management. 33% and 32% were not aware that vaccination of dogs and educating people about the pre and post exposure preventive measures could prevent rabies. Only 5% and 11% of the participants had knowledge regarding PEP for Cat II and Cat III. 58% interns were aware regarding antiseptic use & 66% interns were not in favour of suturing the wound. ⁽¹²⁾

Conclusion

Present study was conducted to assess knowledge, attitude & practice of interns of a tertiary care teaching hospital regarding animal bite management & anti rabies vaccination. This study revealed that knowledge of interns regarding anti rabies vaccine & animal bite management was inadequate may be due to limited practical exposure as almost all such cases are reported to government health care facilities. Though, interns of this institute undergo one month compulsory rotatory internship in Primary health care centres in rural areas, some of them had not completed their rural posting during study period. So may be these interns did not have enough knowledge. Also may be, in a rural posting of 1 month, they had not been got good exposure of animal bite cases and their management. Frequent training for animal bite management at Anti-Rabies clinics in government health care facilities should be arranged for students & interns. Continue medical education (CME) through seminars, conferences should be arranged by institute for training purpose. Time duration for rural posting of interns can be increased for more practical exposure.

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