

CLINICAL KNOWLEDGE AND ATTITUDES OF CLINICIANS TOWARD RABIES CAUSED BY ANIMAL BITES

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ABSTRACT: INTRODUCTION: Rabies is a zoonotic disease that is typically transmitted through bites from infected animals. The majority of reported cases involve wild animals like bats, raccoons and skunks, but domesticated animals like dogs and cats are also a risk. Humans are equally susceptible to the rabies virus if bitten by an infected animal. Once the symptoms have appeared, Rabies is always fatal. Death usually occurs less than a week after the onset of signs. **METHODOLOGY:** A cross-sectional study was conducted in which all the doctors including JRs, Interns, PG students and SRs and Consultants in the department of Surgery, Medicine, Pediatrics and Emergency Medical Officers were taken. Selection was done on the basis of consent to participate in the study by doctors of the various departments handling or required to handle dog /animal bite cases. **RESULTS:** It can be seen that only 76.92% knew all the Reservoirs of Rabies infection, and the difference in knowledge of senior doctor, 43(41.34) is comparable to junior doctors, 37(35.57) and the difference is statistically not significant. Regarding different Modes of Transmission, 90.38% had correct knowledge. The Junior doctors, i.e, 39(37.50) had correct answer whereas, 55(52.88) senior doctors i.e) all answered correctly which is statistically significant. **CONCLUSION:** There is an apparent lack of awareness among doctors regarding appropriate animal wound management and vaccine administration. Reorientation programmes and continued medical education (CME) for the medical practitioners are required to highlight WHO guidelines regarding treatment of animal bite.

INTRODUCTION: Rabies is a zoonotic disease that is typically transmitted through bites from infected animals. The majority of reported cases involve wild animals like bats, raccoons and skunks, but domesticated animals like dogs and cats are also a risk. Humans are equally susceptible to the rabies virus if bitten by an infected animal. Once the symptoms have appeared, Rabies is always fatal. Death usually occurs less than a week after the onset of signs¹.

The rabies virus is transmitted through the saliva of an infected mammal, or host. Contact with the eyes, nose or mouth can technically pass on the virus, but these instances are rare². A bite from the host is the most likely and common way for an animal or person to contract rabies. The infected saliva travels through the nerves and spinal cord towards the brain. The virus then incubates in the body for 3 to 8 weeks (depending on species), with no symptoms of the disease present. Once the brain is infected by rabies, the virus multiplies and spreads to the salivary glands and the symptoms of rabies appear.

The only way to definitively diagnose rabies in dogs is through a direct fluorescent antibody test (dFA) using samples of brain tissue that can only be obtained after death. In humans, multiple extensive tests can be run with samples of saliva, blood, hair and skin, but these are not absolute, nor are they available for animals. Diagnosis in living animals is presumptive and based upon clinical

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signs and patient history, and added to this is a fact that there is no cure or effective treatment for rabies³.

Humans exposed to rabies need to undergo a regimen called post exposure prophylaxis (PEP), a series of injections that include immuno- globulin and rabies vaccine⁴. However, PEP is not affective in humans after symptoms are noted.

MATERIAL & METHODS: Prevention is key when it comes to rabies. Fortunately, it is also quite simple. First and foremost, dogs and other pets should receive routine rabies vaccines. Vaccination and prompt as well effective management of Animal bites is the best way to prevent rabies. Bites to humans should be addressed immediately by a physician. Considering the importance of correct knowledge, this study was taken up to assess the knowledge & practices of Junior as well as Senior doctors in a Private Medical College who handle or are likely to handle case of dog bites.

METHODOLOGY: A cross-sectional study was conducted in which all the doctors including JRs, Interns, PG students and SRs and Consultants in the department of Surgery, Medicine, Pediatrics and Emergency Medical Officers were taken. Selection was done on the basis of consent to participate in the study by doctors of the various departments handling or required to handle dog /animal bite cases. A pre-formed & pre-tested Questionnaire was used and data was analyzed on SPSS-17 and χ^2 was used as a test of significance. A total of 104 doctors consented to participate. There were 49 junior doctors, which included JRs, Interns, PG students and Emergency Medical Officers and 55 senior doctors, which included SRs and Consultants in the department of Surgery, Medicine, Pediatrics and Orthopedics.

RESULTS: It can be seen that only 76.92% knew all the Reservoirs of Rabies infection, and the difference in knowledge of senior doctor, 43(41.34) is comparable to junior doctors, 37(35.57) and the difference is statistically not significant. Regarding different Modes of Transmission, 90.38% had correct knowledge. The Junior doctors, i.e, 39(37.50) had correct answer whereas, 55(52.88) senior doctors i.e) all answered correctly which is statistically significant.

All the doctors knew about the causative agent as a virus. The good no.i.e, 74.03% knew about the rabies free areas in India. When asked about the no. of doses of ARV(anti-rabies vaccine) surprisingly only 7.8% of Junior doctor knew the correct doses and only 53% of senior doctors gave correct answer. It was found to be statistically highly significant.

It was seen that none of the senior doctor and only 2% of Junior doctor knew schedule of Intra dermal (ID) Vaccine and only 3.84% Junior and none of the Seniors knew Vaccine Site & Doses.

Only 36.54% Doctors were aware of PEP in immunised persons of which 20.20% were Juniors and only 16.34% were Senior doctors.. Impressive, 92.30% knew the Indication for Human Rabies Immunoglobulin(HRIG). But only 71.15% knew about both local and intramuscular administration of HRIG.

Regarding the Classification of wounds and its management, only 59.62% could correctly Classify and gave appropriate management according to WHO Classification and it was found to be Statistically highly significant.

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	JUNIOR DOCTORS		SENIOR DOCTORS		TOTAL	
	CORRECT	INCORRECT	CORRECT	INCORRECT	CORRECT	INCORRECT
RESERVIOR	37(35.57)	12(11.53)	43(41.34)	12(11.53)	80(76.92)	24(23.07)
MODES OF TRANSMISSION	39(37.50)	10(9.61)	55(52.88)	0(0)	94(90.38)	10(9.61)
CAUSATIVEAGENT	49(47.11)	0(0)	55(52.88)	0(0)	104(100)	0(0)
RABIES FREE AREA	45(43.26)	4(3.84)	32(30.76)	23(22.11)	77(74.03)	31(29.80)
MODESOF ADM. OF ARV	37(35.57)	12(11.53)	24(23.07)	31(29.80)	61(58.65)	43(41.35)
NO. OF DOSE/ SCHEDULE OF ARV	8(7.70)	41(39.242)	55(52.88)	0(0)	63(60.57)	41(39.43)
AWARE OF ID VACCINE SCHEDULE	2(1.9)	47(45.19)	0(0)	55(52.88)	2 (1.9)	102(98.07)
AWARE OF ID VACCINE SITE	4(3.84)	45(43.26)	0(0)	55(52.88)	4(3.84)	100(96.16)
AWARE OF ID VACCINE DOSE	4(3.84)	45(43.26)	0(0)	55(52.88)	4(3.84)	100(96.16)
PEP IN UNIMMUNIZED	49(47.12)	0(0)	55(52.88)	0(0)	104(100)	0(0)
PEP IN IMMUNIZED	21(20.20)	28(26.92)	17(16.34)	38(36.54)	38(36.54)	66(63.46)
INDICATION OF HRIG	47(45.19)	2(1.9)	49(47.11)	6(5.77)	96(92.30)	8(7.70)
SITE/MODE OF ADM.OF HRIG	31(29.80)	18(17.30)	43(41.34)	12(11.54)	74(71.15)	30(28.85)
CLASSIFICATION OF WOUNDS	21(20)	28(27.0)	41(39.50)	14(13.50)	62(59.62)	42(40.38)
Mx of BITES BASED ON CLASSIFICATION	21(20)	28(27.0)	41(39.50)	14(13.50)	62(59.62)	42(40.38)

KNOWLEDGE OF JUNIOR DOCTORS AND SENIOR DOCTORS REGARDING MANAGEMENT OF ANIMAL BITES

Fig. in parenthesis represent percentages

Reservoir of Infection: $\chi^2 = 0.10$ $p = 0.746$

Modes of Infection: $\chi^2 = 12.42$ $p = 0.018^*$

Rabies free area: $\chi^2 = 15.27$ $p = 0.00009^*$

Modes of Adm. of ARV: $\chi^2 = 10.86$ $p = 0.00098^*$

No. of dose schedule of ARV: $\chi^2 = 75.97$ $p = 0.000000^*$

Awareness of ID Vaccine schedule: $\chi^2 = 2.29$ $p = 0.130$

Awareness of ID Vaccine site: $\chi^2 = 4.67$ $p = 0.030^*$

Awareness of ID Vaccine dose: $\chi^2 = 4.67$ $p = 0.030^*$

PEP in immunised: $\chi^2 = 1.60$ $p = 0.26$

Indication of HRIG: $\chi^2 = 1.7$ $p = 0.19$

Site/mode of adm. of HRIG: $\chi^2 = 2.81$ $p = 0.09$

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Classification of wounds: $\chi^2=10.81$ $p=0.0010^*$

Mx of bites based on classification: $\chi^2=10.81$ $p=0.0010^*$

*Represent the p value to be statistically significant at 95% or 99% confidence limit.

	JUNIOR DOCTORS		SENIOR DOCTORS		TOTAL	
	CORRECT	INCORRECT	CORRECT	INCORRECT	CORRECT	INCORRECT
FIRST AID	45(43.26)	4(3.84)	55(52.88)	0(0)	100(96.15)	4(3.84)
SUTURING IN DEEP WOUNDS	39(35.57)	10(9.6)	43(41.34)	12(11.54)	82(78.84)	22(21.15)
PREFERRED SITE FOR VACCINATION	12(11.53)	37(35.57)	43(41.34)	12(11.53)	55(52.88)	49(47.11)

PRACTISES OF JUNIOR AND SENIOR DOCTORS ABOUT Mx OF ANIMAL BITE

Fig. in parenthesis represent percentages

First Aid: $\chi^2=4.67$ $p=0.030^*$

Suturing in deep wounds: $\chi^2=0.30$ $p=0.86$

Preferred site for vaccination: $\chi^2=29.98$ $p=0.000000^*$

Regarding Correct practices, 96.15% did First- Aid correctly (had its correct knowledge) in patients of animal bite and the difference in knowledge between senior & junior doctors is statistically significant. Only 78.84% knew that wounds should not be sutured. Surprisingly only 52.88% knew that the Preferred site for vaccination is Deltoid and it was significant between Junior and senior doctors.

DISCUSSION: It was surprising to note that only 76.47% doctors knew all the Reservoirs of Rabies and approx. 84% knew about rabies free areas in India. The difference of knowledge between Junior and Senior doctor was statistically significant⁵.

100% doctors knew the causative agents. We found that the many of doctors did not know the correct dose schedules & majority did not know the sites, or routes of vaccine administration in post exposure prophylaxis. The knowledge of dose of ARV and different modes of administration ARV was statistically significant between Junior and Senior doctors. Only 35.29% knew about PEP in immunized persons.

Only 58.82% knew about the classification & wound management according to WHO Classification, and it was found to be statistically significant between the Junior and Senior doctors.

The first-aid was practiced correctly by 96% doctors and 100% of Senior doctors. Surprisingly 78.84% doctors sutured the deep wound or would suture if faced with such a situation. Only 52.88% of the doctors preferred Deltoid as site for Vaccination. And the difference of knowledge was statistically significant Senior and Junior Doctors^{6,7,8}.

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CONCLUSION: There is an apparent lack of awareness among doctors regarding appropriate animal wound management and vaccine administration. Reorientation programmes and continued medical education (CME) for the medical practitioners are required to highlight WHO guidelines regarding treatment of animal bite.

Public health educational programs are needed to create awareness both in the medical community and in the public regarding the dangers of inadequately managed animal bites. The importance of proper wound care, postexposure vaccination with modern tissue-culture vaccine and the administration of human rabies immune globulin, where indicated, must be reinforced.

Modern tissue-culture vaccines, which are currently administered intramuscularly, must be made more widely and easily accessible. Efforts are needed to lower the prohibitive costs of postexposure vaccination by introducing and popularizing the intradermal route of rabies vaccination, which requires just one-tenth of the intramuscular dose. Rabies prophylaxis educational programs should be designed to educate physicians on the guidelines provided by the World Health Organization and the Advisory Committee on Immunization Practices for the treatment of rabies caused by animal bites.

Therefore, keeping in view of the results of our study it becomes necessary to update the knowledge among doctors regarding rabies and dog bite management.

RECOMMENDATIONS: Reorientation programmes and Continued Medical Education (CMEs) should be designed to highlight the guidelines given by WHO regarding treatment of animal bite among general practitioners as well as the specialists involved management of animal bites. Vaccination practice should prevail at every set-up and vaccines should be available for ready use. In order to judge the improvement in knowledge of doctors, surveys like the present study should be conducted frequently and on a larger scale.

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