

Awareness among junior residents regarding management of animal bite in a tertiary care hospital in Haryana

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Received November 26, 2014. Accepted December 1, 2014

Abstract

Background: Animal bites in humans are a major public health problem. Rabies is a highly fatal disease, killing an estimated 20,000 people in India annually. This virtually fatal disease is nearly hundred percent preventable by appropriate postexposure prophylaxis. The knowledge regarding animal bite management among health professionals is of utmost importance for prevention of this deadly disease.

Objective: To assess the awareness about animal bite management in prevention of transmission of rabies to humans among junior residents.

Materials and Methods: This cross-sectional study was undertaken among 120 randomly selected junior residents from various departments of the institute giving equal consideration to residents of clinical and paraclinical disciplines. The study was carried out in the month of September 2011 using the pretested semi-structured questionnaire. The data were analyzed by appropriate statistical tests using the SPSS software, version 18.0.

Results: Residents of the clinical disciplines had better knowledge regarding burden of rabies (80%). Only 50% residents belonging to pre- and paraclinical disciplines had knowledge about correct categorization of animal bite wound. Only 52% residents of pre- and paraclinical disciplines were aware of intradermal antirabies vaccine schedule and immunoglobulin dose to be administered. Nearly two-thirds residents of clinical disciplines were aware of preexposure prophylaxis schedule.

Conclusion: Owing to poor knowledge about prevention and management of such a deadly disease, special attention is needed in strengthening the fundamentals of management skills in internship and through orientation program to junior residents.

KEY WORDS: Rabies, junior residents, antirabies vaccine

Introduction

Rabies is a viral zoonosis that occurs in more than 100 countries and territories. Although a number of carnivores and bat species serve as natural reservoirs, rabies in dogs is the source of 99% human infections and poses a potential threat to more than 3.3 billion people. In humans, rabies is highly fatal once clinical symptoms have developed. The majority of the estimated 55,000 deaths caused by rabies each year

occur in rural areas of Africa and Asia. In India alone, 20,000 deaths (i.e., about 2/100,000 population at risk) are estimated to occur annually. India has 36% global and 65% Asian rabies burden in terms of cases.^[1-3]

The majority of deaths (84%) occur in rural areas. The estimated annual cost of rabies is US\$6 billion (95% CI, 4.6–7.3 billion), with almost US\$2 billion (~40%) due to lost productivity after premature deaths and a further US\$1.6 billion spent directly on postexposure prophylaxis.^[4]

There are many myths and false beliefs associated with wound management. These include application of oils, herbs, and red chilies on the wounds inflicted by rabid animals, and improper washing of wounds.^[5] General practitioners or junior residents constitute a key source of medical care for antirabies treatment to the victims of animal bites. The main objective of this study was to assess the knowledge among the junior residents in a tertiary care institute in Haryana regarding animal bite management.^[6]

Access this article online

Website: <http://www.ijmsph.com>

DOI: 10.5455/ijmsph.2015.2611201496

Quick Response Code:



Materials and Methods

The study was a descriptive cross-sectional survey that was carried out among the junior residents in Pt. Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, Rohtak, a tertiary health care institute in Haryana, India. The study was conducted in the month of September 2011 using the pre-tested semi-structured questionnaire among 120 junior residents from various departments of the institute, among them 60 were from clinical and 60 were from pre- and paraclinical disciplines selected by simple random sampling. The first part of the questionnaire included demographic characteristics whereas the second part had questions regarding the knowledge of animal bite management. The data were analyzed by appropriate statistical tests using the SPSS software, version 18.0.

Results

The mean age of participants was found to be 29.3 years (CI, 28.7–29.9) among which 66% residents were men and

34% women. Residents of the clinical disciplines had better knowledge regarding problems of rabies (80%) compared to those of pre- and paraclinical disciplines (52%) and the difference was found to be statistically significant. Only 50% residents belonging to pre- and paraclinical disciplines had knowledge regarding correct categorization of animal bite wound as compared to 70% residents of the clinical disciplines. Importance of washing the wound with soap and water to prevent rabies was properly mentioned by 92% and 86% residents of clinical and paraclinical disciplines, respectively.

Nearly one-third residents of pre- and paraclinical disciplines were not aware of the subsequent first aid measures to be taken for animal bite, and this difference was found to be statistically significant [Table 1].

Awareness among the residents about the pre- and post-exposure prophylaxis is shown in Table 2. Proper knowledge regarding different types of vaccines used in prevention of rabies was mentioned by 60% and 44% clinical and non-clinical residents, respectively. Only 52% residents of nonclinical disciplines had knowledge about intradermal antirabies vaccine schedule and immunoglobulin dose to be administered.

Table 1: Distribution of residents according to knowledge related to epidemiological determinants of rabies and first-aid measures to be adopted

Variables	Correct knowledge		P-value
	Residents of clinical patients (N = 60)	Residents of pre- and paraclinical patients (N = 60)	
Burden of disease	48 (80)	31 (52)	<0.001
Animals transmitting rabies	55 (92)	52 (86)	0.378
Mode of transmission	55 (92)	53 (88)	0.543
Categorization of bite wound	42 (70)	30 (50)	0.025
Importance of wound washing	55 (92)	52 (86)	0.378
Incubation period of the disease	46 (76)	36 (60)	0.05
First aid awareness	54 (90)	42 (70)	0.006

The values in parentheses indicate percentage.

Table 2: Distribution of residents according to knowledge among general practitioners regarding pre- and postexposure prophylaxis of rabies

Variables	Correct knowledge		P-value
	Residents of clinical patients (N = 60)	Residents of pre- and paraclinical patients (N = 60)	
Awareness about postexposure prophylaxis			
Observation of the animal following bite	48 (80)	37 (62)	0.027
Different types of vaccine used	36 (60)	26 (44)	0.068
Site and route of postexposure prophylaxis	47 (78)	40 (66)	0.152
Schedule of IM route	46 (76)	32 (54)	0.007
Schedule of id route	44 (74)	31 (52)	0.014
Correct dose of vaccine to be administered	42 (70)	36 (60)	0.251
Correct dose of immunoglobulin to be administered	43 (72)	31 (52)	0.024
Awareness about preexposure prophylaxis			
Groups to be given preexposure prophylaxis	46 (76)	42 (70)	0.409
Schedule of preexposure prophylaxis	40 (66)	29 (48)	0.042
Administration of booster injections	31 (52)	26 (43)	0.361

The values in parentheses indicate percentage.

Nearly two-thirds of residents of clinical disciplines were aware of preexposure prophylaxis schedule [Table 2].

Discussion

This study was conducted with the objective of determining the level of awareness among the residents of various disciplines in a tertiary health care institute regarding the management of animal bite. The study found that residents of the clinical disciplines had better knowledge regarding problems of rabies (80%) compared to those of pre- and paraclinical disciplines. Only 50% residents of pre- and paraclinical disciplines were aware of proper categorization of animal bite wounds whereas most of the residents were aware of the importance of prior washing of wounds with soap and water to prevent the transmission of rabies. The knowledge regarding intradermal vaccination against rabies was also poor among the residents of the pre- and paraclinical disciplines.

As government health care institutes receive more animal bite cases, the residents are expected to be aware of managing cases in order to provide quality care to the deprived. This study found that the residents of the clinical disciplines had better knowledge compared to the residents of nonclinical disciplines as they frequently come across such cases.

In a study conducted by Garg et al.^[7] in Delhi among the allopathic doctors, it was found that less than half were aware of the intradermal rabies prophylaxis schedule (39.1%), site (42.2%), and dose (48.4%). The majority (81.4%) were aware of the postexposure schedule in unimmunized disciplines. However, only 40.4% knew the postexposure schedule in previously immunized disciplines, and 47.8% knew preexposure prophylaxis schedule. Our study showed a better knowledge among the residents; the probable reason could be their involvement in active learning during the study period.

A cross-sectional study conducted among general practitioners in Belgaum city by Nayak et al.^[8] depicted majority of doctors (>95%) practiced cleaning of wound as a first aid measure. The antirabies vaccine was used by 95% MBBS doctors and knowledge regarding route of administration of vaccine was fairly good. Only 50% doctors knew the exact site of administration. Proper schedule of vaccination was practiced by only 69% doctors. These findings are coherent with this study.

In a study by conducted by Bhalla et al.^[9] in Jamnagar, most (95%) of MBBS doctors practiced cleaning of wound as first aid measure for animal bite. Their knowledge regarding categorization of animal bites in different classes was very poor. Nobody had knowledge about immunoglobulin or sera, and they were not using them for treating disciplines. Majority of the doctors were of the view that revaccination is not necessary in previously vaccinated patient within 3 months if he or she gets an animal bite. The findings of better knowledge about first aid and poor knowledge about the categorization of the wounds are similar with this study.

Shankaraiah et al.^[10] conducted a study on physicians and observed that knowledge of rabies prevention was low,

especially regarding classification of bite wounds (55.9%), type of animals transmitting rabies (66.9%), correct dose of equine rabies immunoglobulin (66.9%), and preexposure prophylaxis (68.8%). There was relatively good knowledge concerning the burden of disease (75.2%), importance of washing the wound (80.7%), number of doses of vaccines (74.4%), and dose-schedule of intradermal rabies vaccination (75.2%). Findings of this study were similar to those reported in the study conducted by Singh et al.,^[6] and Shah^[11] in India and abroad.

The findings of the study are restricted to junior residents working in a tertiary health care institute and cannot be extrapolated to other doctors working in private health sectors and rural areas. A knowledge gap was found in this group of residents, and therefore, further studies are recommended to evaluate the knowledge and practices of junior residents.

Conclusion

There is an apparent lack of awareness among junior residents regarding appropriate animal wound management and vaccine administration. This problem can be addressed through well-structured educational strategies via regular continuing medical education, seminars, and training programs to highlight the WHO guidelines regarding treatment of animal bite. More emphasis should be laid on enforcement of key issues regarding animal bite management during undergraduate teaching. Persistency of the doctors in following these guidelines will pave the way in prevention of human rabies.

References

1. World Health Organization. Rabies vaccines: WHO position paper. *Wkly Epidemiol Rec* 2010;32(85):309–320.
2. Verma R, Khanna P, Prinja S, Rajput M. Intra-dermal administration of rabies vaccines in developing countries: at an affordable cost. *Hum Vaccin* 2011;7:792–4.
3. Chatterjee S, Riaz H. Rabies: beware of the dog. *BMJ* 2013;347:f5912.
4. World Health Organization. *WHO Expert Consultation on Rabies: Second Report*. Geneva: World Health Organization, 2013.
5. Sekhon AS, Singh A, Kaur P, Gupta S. Misconceptions and myths in the management of animal bite case. *Indian J Community Med* 2002;27:9–11.
6. Singh A, Bhardwaj A, Mithra P, Siddiqui A, Ahluwalia SK. A cross-sectional study of the knowledge, attitude, and practice of general practitioners regarding dog bite management in northern India. *Med J DY Patil Univ* 2013;6:142–5.
7. Garg A, Kumar R, Ingle GK. Knowledge and practices regarding animal bite management and rabies prophylaxis among doctors in Delhi, India. *Asia Pac J Public Health* 2013;25(1):41–7.
8. Nayak RK, Walvekar PR, Mallapur MD. Knowledge, attitudes and practices regarding rabies among general practitioners of Belgaum city. *Al Ameen J Med Sci* 2013;6(3):237–42.
9. Bhalla S, Mehta JP, Singh A. Knowledge and practice among general practitioners of Jamnagar city regarding animal bite. *Indian J Community Med* 2005;30(3):94–6.

10. Shankaraiah RH, Bilagumba G, Narayana DHA, Annadani R, Vijayashankar V. Knowledge, attitude, and practice of rabies prophylaxis among physicians at Indian animal bite clinics. *Asian Biomed* 2013;7(2):237–42.
11. Shah SF, Jawed M, Nooruddin S, Afzal S, Sajid F, Majeed S, et al. Knowledge and practices among the general practitioners of Karachi regarding dog bite management. *J Pak Med Assoc* 2009;59(12):861–4.

How to cite this article: Shashikantha SK, Asharani SK. Awareness among junior residents regarding management of animal bite in a tertiary care hospital in Haryana. *Int J Med Sci Public Health* 2015;4:463-466

Source of Support: Nil, **Conflict of Interest:** None declared.