Title: STATUS OF ANIMAL BITE TREATMENT TO PREVENT HUMAN RABIES IN HIMACHAL PRADESH

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Keywords Rabies animal bites wounds antibiotics vaccines

Abstract Evaluate animal bite treatment prescriptions for prevention of rabies in Himachal pradesh.

Original Article

Status of Animal Bite Teatment to prevent human Rabies in Himachal Pradesh

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ABSTRACT

Objectives: Evaluate animal bite treatment prescriptions for prevention of rabies in Himachal Pradesh.

Study design: Cross sectional study.

Settings: Study was carries out in primary health care institutions along the highway from Shimla to Paonta-Sahib.

Subjects: Prescription slips of animal bite cases from PHC/CHC.

Main outcome measures: Pattern of animal bite treatment for rabies prevention.

Results: Out of 19 prescriptions analysed, 15 were males and 4 were females. Age ranged from youngest 4 year old to oldest of 76 years old. Most (63%) were dog bitten cases followed by monkey bite in 26% of cases. Category of exposure was not mentioned in 74% of prescriptions. Wound washing was prescribed in 26% of prescriptions. Antibiotics were prescribed in 16% of prescriptions. Tetanus toxoid was prescribed among 79%. Antirabies vaccine was prescribed in all the exposures. RIGs were prescribed in 10%.

Conclusions: Analysis of prescriptions revealed that treatment instructions were not covered according to the standard treatment protocol. We recommend -

1. In post exposure prophylaxis of rabies reduced multisite intramuscular regimen (2-1-1) of cell culture and purified duck embryo vaccine is recommended in rural area.
2. Sensitize/train all the health care providers at primary care level to manage animal bite cases to prevent rabies to develop uniform standard of treatment.

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INTRODUCTION

In fact, there is no proven instance of recovery from rabies but it can be prevented. Mortality with rabies is near to 100%. Therefore, animal bites, suspected to cause rabies must be treated correctly and completely. Rabies prevention from such animal bites mainly includes three life saving steps:[1]

1. Thorough washing of animal saliva from the wound with soap and water immediately after bite and wound treatment without dressing and stitches,
2. Injection of rabies immune-globulins (RIG) and,
3. Anti-rabies vaccines course.

Primarily rabies is canines' disease. Man suffers accidently. A very few people understand its transmission and prevention. People, mainly from rural background still show their dependence on local witch craft and herbal applications for animal bite treatment[2]. Prevention of rabies from animal bites is a matter of primary health care and most important component of rabies control in humans.

In Himachal Pradesh, rabies control activities have increased in last decade. National Conference on rabies control has been organized in 2005[3]. Intra-dermal (tissue culture) vaccine regimen is being popularized among the primary health care physicians[4]. There were noble intentions to increase the knowledge, reduce the cost of vaccine and achieve universal access. With continuous percolation of knowledge, there will be improved management of animal bite in the state. This might be a case for evaluation.

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METHOD

All the government Community/primary Health Centers on Shimla-Paonta-Sahib high way were visited once during May, June, July, 2012 to conduct this study. These institutions visited conveniently while researcher travelled to attend the medico-legal cases in district Sirmour. Director Health Services Office was informed about the collection of animal bites treatment prescriptions. Prescribing doctors were informed and treatment prescriptions regarding animal bite cases were photo copied with their consent. These slips were made anonymous and unlinked, before being submitted for analysis. These prescriptions were analyzed in the department of community medicine. Comparison of these treatment prescriptions of animal bites were done with standard treatment protocol of animal bites. General prescription pattern was analyzed without identification of any prescribing physicians.

RESULTS

We collected and analyzed nineteen prescriptions. There were 15 males and 4 females. Among males most (11) were adult males and two were male children. Among females 3 were adults and 1 was child. Age of the cases ranged from 4 to 76 years. (Table I)

Most were dog bitten cases, few were cat bites and other wild animal bites. (Table II)

Table 1
Age and sex wise distribution of animal bite cases

Age group	Male	Female	Total	%age
Less than 15 yrs.	4	1	5	26.32%
15-60 yrs.	9	3	12	63.16%
60 and above	2	0	2	10.53%
Total	15	4	19	100%

Table 2
Classification of animal bites:

Biting Animal	Male	Female	Total	%age
Dog bite	12	-	12	63.16%
Monkey bite	3	2	5	26.32%
Cat bite	-	1	1	5.27%
Unidentified animal bite	-	1	1	5.27%
Total	15	4	19	100%

Table 3
Distribution according to category of bite

Category of bite mentioned	No. of persons	%age
Category I	1	5.26%
Category II	2	10.53%
Category III	2	10.53%
Not mentioned	14	73.68%

Table 4
Treatment prescription where category was mentioned.

Category of exposure	No. of exposures	RIG advised (n)	ARV advised (n)
Case I	1	0	1
Case II	2	0	2
Case III	2	2	2
Not mentioned	14	0	14
	19	2	19

Most 14 of the prescriptions were without the description of site and category of bite. (Table III)

It was observed that antibiotics were prescribed in 3 (16%) of cases. (Figure 2) Out of these 3 cases of antibiotics prescription, one was category III exposure and in two cases exposure was not categorized.

Rabies immune globulins were found to be prescribed in two of the prescriptions. Both of them were category III exposures as per the prescription. It was observed that a case of category I exposure was prescribed ARV against recommendations. (Table IV)

DISCUSSION

Physicians mentioned the biting dog without writing dog traces (pet/street/wild), site and nature (licks/abrasions/transdermal) of bite on the prescriptions. The dog traces, site and nature of the bite determine the course of treatment. If dog is traceable and found alive after ten days vaccine can be stopped. It saves money, agony and absenteeism of the patient.

Treatment sequence is desired in the order of wound care, rabies immune globulins, anti-rabies vaccines and adjuvant treatment. We believe that doctors might have ensured verbally about the washing of wound. But this vital part was not on 14 treatment slips. All wounds irrespective of its

nature must be washed thoroughly with soap and water to remove most of saliva of biting animal. If saliva contains rabies viruses they will be removed.

Mainly anti rabies vaccines were the visible course of treatment. They were practicing Standard WHO intramuscular regimen (0, 3, 7, 14, and 28). The directions to start intra dermal regimen are not being followed. Possible reasons could be lack of technical skill and sufficient number of animal bite cases for vaccine pooling in primary health care setup. Cost of the vaccine is being borne by the patients, even for those below poverty line (BPL). Just for the reason that it is an outdoor care. Animal bite is not covered under Rashtriya Swasthya Bima Yojna (RSBY), an insurance scheme to cover BPL families health[5].

Rabies immune globulins were found to be prescribed in two of the prescriptions. Both of them were category III exposures as per the prescription. It was observed that a case of category I exposure was prescribed ARV against recommendations. This over prescription of ARV emphasizes the fear associated with 100% fatal outcome of rabies.

In 14 of the 19 prescriptions though category of exposure in not mentioned but it seems that these 14 cases were category II exposures as all of them were prescribed ARV without RIG. It is also possible that some of the exposures were either category III or category I exposure and therefore these cases were either under treated or over treated. In both of these possible scenarios patient is at loss. If there is over prescription, this imposes financial burden and if there is under treatment, this exposes the patient to the risk of rabies.

The adjuvant treatment is also a necessary part of wound management, if wound is severe. Punctured wound may carry others foreign bodies and bacteria. Then it must be considered for tetanus, analgesics, and antibiotics etc. It was observed that antibiotics were prescribed in 3 (16%) of cases. (Figure 2) Out of these 3 cases of antibiotics prescription, one was category III exposure and in two cases exposure was not categorized.

It is easy to say from the pattern of these prescriptions that animal bites are not managed as per the recommended treatment protocol in primary health care set up. In post exposure prophylaxis of rabies reduced multisite intramuscular regimen (2-1-1) of cell culture and purified duck embryo vaccine is recommended in rural area. All doctors and health multipurpose workers working in primary health care settings should be trained to manage animal bites. All animal bites must be attended as medical emergencies and RIGs and vaccines should be given from government side. Reduce stray animals and improve pets care. So any biting dog /cat may be traced. Increase health education on rabies to reduce myths and misbelieves known to hinder the people from appropriate treatment.

REFERENCES

1. Immunological Basis for Immunization Series. Module 17- Rabies. World Health Organization.2010:3)
2. M.K. Sudarshan , S.N. Madhusudana , B.J. Mahendra , N.S.N. Rao , D.H. Ashwath Narayana , S. Abdul Rahman , F.-X. Meslin , D. Lobo , K. Ravikumar, Gangaboraiah :Assessing the burden of human rabies in India: results of a national multi-center epidemiological survey. International Journal of Infectious Diseases.2007; 11:29-35
3. Correspondence from Director Health Services, Directorate of Health and family welfare, H.P. to all the Chief Medical Officers in H.P. 13th May, 2008
4. Association for prevention and control of rabies in India, Conference 2005 Shimla
5. Rashtriya Swasthaya Bima Yojana. Guidebook for Hospitals / Nursing Homes. Amicus Advisory Services: 7