

Title: ASSESSMENT OF THE TREATMENT PRACTICES AS PER POLICIES FOR PREVENTION AND CONTROL OF HUMAN RABIES DUE TO DOG BITE IN THE HEALTH INSTITUTIONS OF HIMACHAL PRADESH

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Keywords Dog bite Anti rabies vaccine, Rabies Immune globulin and community health centers

Abstract In Himachal Pradesh 24000 to 25000 dog bite cases occur every year. As per the policy of the state government post exposure prophylaxis is given free for all from the level of primary health centers onwards..

Original Article

ASSESSMENT OF THE TREATMENT PRACTICES AS PER POLICIES FOR PREVENTION AND CONTROL OF HUMAN RABIES DUE TO DOG BITE IN THE HEALTH INSTITUTIONS OF HIMACHAL PRADESH.

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ABSTRACT

Background: In Himachal Pradesh 24,000 to 25,000 dog bite cases occur every year. As per the policy of the state government post exposure prophylaxis is given free for all from the level of primary health centers onwards

Methods: Community health centers were selected by non probability purposive sampling from three districts where more dog bite cases were reported from 2011 to 2013. Interview of the medical officer in-charges, observation of the infrastructure and documents were done on the basis of policy recommendations. The collected data was analyzed.

Results: Primary health care institutions give partial post exposure prophylaxis for rabies prevention. There is no effort to procure rabies immune globulins. Despite the dual (traditional and rational) treatment dog bite cases remain in false sense of rabies prevention. To cover this neglect we need to strengthen primary health care institutions and increase public awareness on rabies risk, prevention and dog care.

Key words: Dog bite, Anti rabies vaccine, Rabies immune globulin and community health centers.

INTRODUCTION

Many countries in the world got rabies free status which was achieved through the joint efforts and shared resources of local and national government, various sectors of public health, animal health, agriculture, environment, legislation and policy as well as non-government partners¹. On this evidence, WHO has made a target to eliminate the disease by 2020 in endemic South East Asian countries including India¹. Rabies is an infectious, fatal disease characterized by severe dysfunction of the central nervous system, caused by single stranded negative sense RNA virus belonging to the genus *Lyssa* virus of the family *Rhabdoviridae*². In India the main vector for rabies transmission is dog. In every 2 seconds a person is bitten by a dog in India. In Himachal Pradesh 24,000 to 25,000 dog bite cases occur every year. As per the policy of the state government post exposure prophylaxis is given free for all from the level of primary health centers onwards⁴. In this study our interest is to see the translation of this policy into the practice.

METHODOLOGY

We studied the state policy on animal bite cases for prevention of rabies. We reviewed the data of dog bite cases in the state from 2011 to 2013. We selected three districts reporting higher number of dog bites in this period. We selected one CHC from each district, where dog bite cases reported in larger numbers for treatment and medical officers expressed their interest to co-operate. Study duration was from June 2014 to May 2015. In depth interview questionnaires and observation check lists were developed on the basis of policy recommendations. Consent of medical officer in charges was taken before conducting the study. Data collected was analyzed by simple proportional and thematic analysis for the interpretation of the results.

RESULTS

The data was gathered from following institutions:

- I. CHC Chowari (Chamba)
- II. CHC Syria (Solan)
- III. CHC Bhavanagar (Kinnaur)

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TABLE 1
Responses of the Medical Officers

S.No	Theme	Responses
1.	Management of the dog bite cases in health department institutions	There is 24 hours facility to treat the dog bite cases. All the dog bite cases are treated but the partial treatment given to category 3 bites as RIG is not available in CHCs.
2.	Post exposure prophylaxis	Rabies immunoglobulin has never been supplied by government in institutions surveyed. According to one Medical Officer In charge "Rabies immunoglobulin is even not purchased through RKS because it is not in the rate contract" For rabies immunoglobulin patients are referred to tertiary health care centers. "there is a fear of adverse reaction of the immunoglobulin which could not be managed at their level" said other MOI/C. Anti rabies vaccine given free of cost to the BPL patients, having BPL certificate. In one institution vaccine is given free of the cost to all the patients irrespective of their BPL status. "It is also purchased through RKS in emergency" MOI/C.
3.	Schedule for rabies Post exposure prophylaxis	Route of the ARV is used by the doctors as per their convenience. Everyone talked intra dermal schedule. Reason to adopt a particular schedule in a given case condition was not explained.
4.	Intersectoral coordination for prevention and control of rabies	Veterinary and health coordination is not there to confirm the diagnosis in suspect rabid animal. "If stray dogs are biting number of people and dog bite cases are coming to us we don't know whom to ask about the containment of these stray dogs" said one MOI/C.
5.	IEC	IEC activities are not organized in schools and AWC as there are no guidelines from the government "IEC material for prevention and control of rabies is not provided by the department" MOI/C. Most of the time due to overcrowding in the OPD patients are not taught about the prevention and control of rabies

A. Results (In-depth interview)

Analysis of the responses of the medical officers

The analysis of the responses on the following themes is given as under in Table-1:

B. Results (Observation Checklist)

Documents

During the stay in the each health institutions prescription slips were collected and made anonymous and unlinked after the consent of medical officers. Table 2 shows the analysis of the prescription pattern of the dog bite cases.

Anti rabies vaccine was prescribed to 92.15 percent of the patients with adjuvant treatment to 82.35% of the patients. Severe bite cases (22%) were referred. Prescription slips reflects partial rabies prevention at CHC level.

OPD register: From the secondary data of dog bite cases in the year 2013 there were total 493 patients were registered. Table 3 shows the observation outcome from the OPD register in respect of the entry of identification data and diagnosis and treatment.

INFRASTRUCTURE

OPD room: By observation it is seen that the number of the OPD rooms were less and two to three doctors used to sit in one room. Waiting room

outside the OPD room was inadequate. Overcrowding seen in some days of the week especially on Monday and Tuesday. Dog bite patients are seen as routine patients. IEC material in the form of poster etc was not present in the OPD room except in one institution where one poster of pharmaceutical company showing the schedule of vaccine.

Injection room: Injection rooms were lacking adequate light and ventilation. Wash rooms were not attached with injection rooms. In order to wash

TABLE 2
Analysis of prescription pattern

Description of wound	Number (n-51)	Percentage
Site of wound mentioned	18	35.29%
Categorization of wound done	16	31.37%
Description of wound management		
Advice for wound washing given	33	64.70%
Application of Antiseptic	28	54.90%
Prevention of rabies		
Referral for Rabies Immunoglobulin	11	21.56%
Anti rabies Vaccine prescribed	47	92.15%
Associated Treatment		
Injection Tetanus Toxoid	42	82.35%
Antibiotics	23	45.09%
Analgesics	25	49.01%
Other treatment*	7	13.72%

* Includes Vitamin B complex and Antacids etc.

TABLE 3
Results of the Observation of the OPD register

Institution	Complete identification data (Name, age, sex and address)	Diagnosis and Treatment
I (n-325)	41 (12.61%)	115(35.38%)
II (n-92)	36 (39.13%)	48(52.17%)
III (n-76)	26 (34.21%)	42(55.26%)
TOTAL(n-493)	103(17.60%)	205(39.11%)

the bite wound patients had to go to the common wash room or the tap which is generally present in the backyard of the hospital. Refrigerator was present in injection room of one institution only.

Emergency tray: Emergency tray was present in the injection rooms but the contents in the emergency tray were less as compared to the standard emergency tray⁵.

DISCUSSION

There is a policy in Himachal Pradesh to give the post exposure prophylaxis to all the dog bite cases free of cost in all the public health care institutions⁴. In Sri Lanka the number of rabid dogs has remained relatively unchanged, but the number of suspect human rabies cases is decreasing gradually. These findings indicate that after successful use of post exposure prophylaxis (PEP) by animal bite victims and increased awareness about rabies prophylaxis, in the population of a country the incidence of Rabies decreases⁶.

RABIES IMMUNOGLOBULIN

The results found that RIGs has never been supplied by the government to the health institutions. Patients are referred to the tertiary care health centers for RIG. Due to sporadic number of cases it becomes difficult for doctors to recollect the commercial name of rabies immunoglobulin and calculate the appropriate dose, and then the chemist does not understand the RIGs and shows the inability to procure. Lastly doctors and paramedics have the unnecessary fear of severe anaphylactic reaction after the inoculation of equine RIG and think it better to refer the patients to tertiary care centers. Inquiries reveal that there are enough stocks of immunoglobulin at CRI, Kasauli⁷. There are instances when it is seen that a small delay to inoculate the rabies immunoglobulin has resulted in the death of the dog bite patients⁸.

ANTIRABIES VACCINE

There is irregular supply of ARVs, particularly in primary-health-care facilities. In our study we found that the vaccine is not available in primary health care institutions and patients are being referred to the community health centers. The anti rabies vaccine in community health centers is meant to be given free of cost only to the people below poverty line who are having the BPL cards. But many poor patients who do not possess a BPL card have to purchase this costly vaccine. RKSs are formed starting from the level of the primary health centers. There is provision to procure the drugs including ARV through the budget of RKS but it is not seen. ARV vaccine is prescribed as per the convenience of doctors. The Intra dermal anti rabies vaccination was started in October 2008 in Himachal Pradesh. Even Department of health and family welfare has given the affidavit in the high court that they are using the intradermal route of the ARV⁹. Rahim et al.¹⁰ and Mankeshwar et al.¹¹ highlighted the economic benefits of the intradermal schedule.

Intersect oral coordination and IEC activities

Lack of inter sectoral coordination between health and veterinary department. Mostly the dog bite cases come and receive PEP and in many cases the suspected animal is killed or dies and is unavailable for the observation. A veterinarian's service is needed to examine the animal and submit it for confirmation of rabies from the reference laboratory. It is not done. ABC-AR projects work in urban settings only. In the results it emerged that IEC activities for the prevention and control of rabies in the health institutions were negligible. IEC material like posters, wall writing about rabies were not seen in the health centers. There was no activity in schools to increase the awareness of children. These findings corroborate with other studies^{12,13}.

DOCUMENTS

Out of the 51 prescription slips, site of the wound was written in 35.29 percent of slips which shows their casual approach about the treatment. Site of bite, where plexus of nerves is dense and bites which are close to the brain the chances of developing rabies are more for example on face and

hands etc. Categorization of the wound was written in 31.37 percent (Table 2) of the cases. This shows many things, the lack of knowledge of the doctors about the classification of the bite, casual attitude towards this fatal infection and weakness of the health system, monitoring and technical support. Advice for wound washing was written in 64.70 percent of the patients. Reason to write the wound washing for less number of the patients is that patient had washed the wound and so the doctor had not written it. Since the rabies immunoglobulin was not available in the institutions surveyed. The referral was only for 21.56 percent of the patients (Table 2) the number is very less which shows that either the doctors have not written the immunoglobulin to the patients who require it or they were not having the adequate knowledge of the indication of the immunoglobulin. Anti rabies vaccine was prescribed to most of the patients i.e. 92.15%. Associated treatment like injection tetanus toxoid, antibiotics and analgesics were written to the patients. The saliva of the dogs beside rabies virus contains number of the bacteria and viruses. To prevent this infection in case of dog bites antibiotics cover is mandatory. Similar findings were seen in the study of Mazta et al.¹⁴

In the OPD register diagnosis and treatment was written in the 39.11 percent (Table 3) of the patients, whereas the complete identification data was written in 17.60 percent of the patients. Any extra effort to follow the treatment was not evident in the register such as to note mobile/telephone/e-mail of the patients. Similar findings were shown in the survey done in Maharashtra in the community health centers¹⁵.

INFRASTRUCTURE

Due to the shortage of OPD rooms, two to three doctors used to sit in one OPD room. There is overcrowding in the peak hours in OPD rooms. The emergency case such as dog bites is ignored in such situation. Wash room was not attached with the injection room so patients had to wash the wound in common bathroom or the taps in the backyard of the hospitals, vaccine was kept in the ice lined refrigerators which were lying away from the injection room. This can also affect the cold chain management. Emergency trays were available in the injection room but none of the emergency trays have essential items as compared to standard emergency tray⁴. If anti allergic drugs are not

available on the spot and treatment is delayed, it will definitely harm the patient.

CONCLUSION

There is gap in policy and existing treatment practices for prevention and control of rabies. Rabies prevention is a matter of primary health care and all elements of primary health care are supported from public finance. Dog bite cases do not receive complete post exposure prophylaxis near to their residence. Even it is financed by the client still he has to pay for travel and stay. Primary and secondary health care institutions do not procure RIGs. Health care providers need training and regular sensitization on prevention of rabies.

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