Title: PROFLE OF ANIMAL BITE VICTIMS AND COMPLIANCE TO THE 4 DOSE IDRV SCHEDULE AMONG CHILDREN ATTENDING ANTI RABIES CLINIC, MIMS, MANDYA

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Keywords Rabies, Animal Bite, Children, IDRV compliance

Abstract Study the demographic profile and seasonal trends among children attending ARC, MIMS, Mandya. Assess the characteristics of biting animal and compliance to post exposure prophylaxis among children attending ARC, MIMS, Mandya.

Original Article

Profile of Animal Bite Victims and Compliance to the 4 Dose IDRV Schedule among Children Attending Anti Rabies Clinic, MIMS, Mandya

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ABSTRACT:

The present study was undertaken with the objective to:

(1) Study the demographic profile and seasonal trends among children attending ARC, MIMS, Mandya. And,

(2) Assess the characteristics of biting animal and compliance to post exposure prophylaxis among children attending ARC, MIMS, Mandya.

All the victims of animal bites aged less than 15 years who attended the ARC from 1st January 2009 to 31st December 2009 were interviewed with a pre-structured and pre-tested questionnaire, followed by clinical examination.

The data from 1st January 2009 to 31st December 2009 - A one year period was analyzed for the study which is a cross-sectional study. The study population included 1364 animal bite victims of age less than 15 years. Statistical analysis done was Proportions and percentages.

Of the 4,013 animal bite victims, 1,364 (34.0 %) were aged less than 15 years. Majority of the animal bite victims 968 (71.0 %) were from rural areas. The peak of animal bites among children was seen during April – May 288 (21.2 %). 1016 (74.5 %) to stray and community owned animals and 348 (25.5 %) were exposed to pet animals. 1314 (96.3 %) were exposed to bites by dogs. 255 (18.7 %) children had not practiced any wound toilet measure. 957 (70.2 %) had category 3 exposure of which only 483 (35.5 %) children completed 4 doses of intra dermal rabies vaccine as per schedule.

Key Words : Rabies, Animal bite, children, IDRV compliance

Introduction

Rabies is an acute viral disease which causes fatal encephalomyelitis in warm blooded animals including man.[1] It is a 100% fatal disease which can be prevented by appropriate Wound Treatment and Post Exposure Immunization.

It is estimated in India 1.7 crore animal bite exposures lead to 20,000 deaths. 95% of the 50,000 global rabies deaths are because of dog bites.[2,3] The Post Exposure Prophylaxis [PEP] is of utmost importance as there is no cure for rabies. Every year only 10 to 15 lakh people exposed to animal bites are able to receive PEP.

The Anti Rabies clinic in Mandya Institute of Medical Sciences is providing PEP to animal bite victims every day since 8th September 2007. Analysis of the data from ARC is a simple, quick and effective tool for monitoring the various aspects and trends of the animal bite victims. As animal bites are common among children[5,6], the present study was taken up to understand the epidemiological variations and risk factors associated with animal bites among children aged less than 15 years.

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Objectives:

The present study was undertaken with the following objectives:

1. To study the demographic profile and seasonal trends among children attending ARC, MIMS, Mandya
2. To assess the characteristics of biting animal and compliance to post exposure prophylaxis among children attending ARC, MIMS, Mandya.

Materials and Methods:

A one year cross sectional study was conducted in Anti Rabies Clinic, Mandya Institute of Medical Sciences, Mandya, Karnataka State. All the patients aged less than 15 years who attended the ARC from 1st January 2009 to 31st December 2009 were interviewed with a pre-structured and pre-tested questionnaire, followed by clinical examination. The post exposure prophylaxis was administered and the compliance noted. The data was analyzed and presented using proportions and percentages.

Results:

The total number of animal bite victims who attended anti rabies clinic from 1st January 2009 to 31st December 2009 was 4,013.

Demographic profile: Of the total 4,013 cases 1,364 [34.0%] were aged less than 15 years. 963 [70.6%] were male and 401 [29.4%] were female. The male: female ratio being 5:2.1.396 [29.0%] were from urban areas and 968 [71.0%] were from rural areas.

Table 1:
Distribution of animal bite victims according to age (N = 1364)

Age group	Total no. of animal bite cases	Percentage
0-364 days	14	1.0
1-4 years	304	22.3
5-9 years	480	35.2
10-14 years	566	41.5
Total	1364	100.0

Table 2:
Distribution of animal bite victims according to Modified B.G. Prasad's Socio-Economic Classification (N = 1364)

Socio-Economic Class	Number of children	Percentage
I	17	1.2
II	115	8.4
III	750	55.0
IV	399	29.2
V	83	6.3

Seasonal trends: Maximum numbers of animal bite cases (288) were seen during the month of April – May which accounted for an average of 10.6% of the cases per month. Least number of animal bite cases 79 was seen in July accounting for only 5.8% of total cases per year.

Characteristics of biting animal and the type of exposure

1314 (96.3 %) were exposed to dogs, 28 (2.1%) to cats, 18 (1.3 %) to monkeys and 04 (0.2 %) to other animals (2 leopard, 1 sheep & 1 cow). 348 (25.5 %) were exposed to pet animals and 1016 (74.5%) to stray and community owned animals. 329 (94.5 %) of the pet animals were dogs, 17 (4.9 %) were cats, and 2 (0.6 %) were other animals. Of the

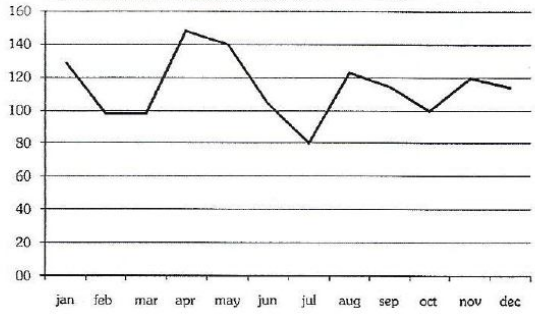

Fig. 1: Graph showing the seasonal trend of animal bite cases among children

children exposed to pets, 76 (21.8 %) reported that the pet animals were immunized. The animals had bitten 1184 (86.8 %)children, scratched 179 [13.1%] children and 01 [0.1%] children had ingested milk of affected animal. 1206 [88.4%] children had a single bite / scratch while 158 [11.6%] had multiple bites / scratches. 1018 [74.6%] exposures were caused by animal which were provoked while 346 [26.4%] exposures were caused by unprovoked animals. 768 [56.3%] of the children were bitten / scratched on the lower limb, 489 [35.9%] on upper limb, 49 [3.6%] on chest & abdomen, 74 [5.4%] on head & neck and 2 [0.1%] on genitalia.

Table 3:
WHO classification of exposure (N = 1364)

Category	Total no. of animal bite cases	Percentage
I	00	0.0
II	407	29.8
III	957	70.2
Total	1364	100.0

Wound toilet and Post exposure prophylaxis: 992 [72.8%] children came directly to ARC, MIMS for treatment while 372 [27.2%] were referred from PHC medical officers or private practitioners. Of the 372 children who were referred, 27 [7.3%] had received the first dose of anti rabies vaccine, all of them by intramuscular route. Of the 372 children who were referred, 285 [76.6%] had received tetanus toxoid.

255 [18.7%] children had not practiced any wound toilet measures, 156 [11.4%] had washed the wound with water only, 930 [68.2%] had washed the wound with soap & water and 23 [1.7%] had applied virucidal agents. 152 [11.4%] children had applied irritant over the bite wound.

All the 957 bite victims who were classified as having Category 3 exposures were advised Equine rabies immunoglobulin. Of these 957 children, 111 (11.6 %) children took the rabies immunoglobulin. 9 (8.1%) Children were sensitive to rabies immunoglobulin and hence could not be administered. Immunization had to be restarted for 36 [2.6%] children as the children came late during the follow up visits.

Table 4:
Distribution of animal bite victims according to compliance to 4 dose IDRV schedule (N = 1364)

No. of doses	Total no. of Children taken	Percentage
1	217	15.9
2	243	17.8
3	421	30.8
4	483	35.5
Total	1364	100.0

Discussion:

Our study reveals 34.0 % of all the animal bite victims were children aged less than 15 years. Majority 71.0 % of the Children were from rural areas. The findings are similar to study done by Tiwari Ranjana et al. 348 [25.5%] were exposed to pet animals and 1016 [74.5%] to stray and community owned animals. These findings are similar to study done by Renu bedi et al. However, it is very much in excess of the WHO multicentric study revealation of 11.1%.

70.2 % of the children had class III bites. 27.3 % were referred from the peripheral health centers for IDRV. 7.3% had received first dose of IM ARV at the periphery. Similar findings were recorded at Antirabies clinic at SCB medical College Hospital, Cuttack, Orissa and at private anti-rabies clinic at Kukarwada town in North Gujarat.

Conclusion:

More than one third of the animal bite victims are children less than 15 years. A substantial proportion 255 (18.7 %) of the animal bite victims do not practice any wound toilet measures. Application of irritant 52 [11.4%] over the bite wound is still practiced.

Awareness and motivation about the Immunization of the pet dogs and completion of four dose of PEP with IDRV is abysmally poor.

Recommendations:

Controlling the stray dog population could serve as an effective defense against dog bites there by reduced the problem of rabies. The community has to be made aware about the need to immunize pet dogs, importance of wound toilet and completion of all 4 doses of IDRV according to schedule. Policy makers to consider the inclusion of ARV in the National immunization schedule as an optional vaccine (Pre Exposure). Increasing awareness among the children regarding avoiding bites, wound toilet, responsible pet ownership and other related matter by including the topics into the school curriculum will help in the long term.

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