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Research Article

A Study on Animal Bite Cases in Srinagar, Uttarakhand

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Abstract

Background: *Rabies continues to be a major public health problem in India. It is a zoonotic disease, which is 100 percent fatal and causes 55000 deaths / year in rabies endemic area (Asia, Africa). For Rabies, animal bite are the chief sources of infection of rabies. Moreover, multiple myths are associated with disease which vary from region to region, and they also determine the post exposure treatment seeking behaviour of animal bite victims. In Srinagar, which is prone area for Rabies, there are number of wild animals like jackals, foxes, leopard, monkey etc who enter residential area and bite persons. Hence, present study was planned with following aims and objective.*

Aim & Objective:

To study the epidemiological factors related to animal bite cases.

To study the various aspects of post exposure prophylaxis among victims.

Methods*: Data was collected from medical record section of HNB Base hospital, VCSG Govt. institute of medical science and research, Srinagar Uttarakhand during the 2 years. All the cases of animal bite registered in same period were enquired about the various aspects of post exposure prophylaxis. Data was tabulated and analysed using Microsoft excel.*

Result: *Out of 624 cases of animal bites, incidents of dog bite were 90% and increasing in March, April and May compare to other animal bites.*

Conclusion*: Measures should be taken by the government local authorities to prevent the rising cases of animal bites and awareness among community should be spread.*

Keywords: *Animal bite, Rabies, Post exposure prophylaxis, Uttarakhand.*

Introduction

Animal bites to humans is a public health problem, posing a potential threat of rabies to over 3.3 billion people worldwide **[**1**]**. These exposures occur in rural and urban areas and has been documented for more than 4000 years **[**2**]**. Most cases occur in Africa and Asia; where a close habitation of large human and dog population is seen **[**3**]**. The World Health Organization's (WHO) south-east Asia region has more exposures than in any other part of the world; nearly, 1.4 billion people are at risk **[**4**]**. In India, an estimated 17.4 million animal bites occur annually, with an incidence of 1.7% **[**5**]**. True burden of rabies in India is not fully known; although as per available information, it causes 18 000-20 000 deaths every year and it accounts for 36% of the world's rabies deaths. Globally rabies causes an estimated cost of US$ 8.6 billion per year **[**6**]**. Over 4.6 lac dog bite cases had occurred in last 14years (2008 to 2014). On average 92 people are dog bitten every day in state of Uttarakhand **[**7**]**.

Rabies is one of the fatal diseases caused by bite of animals like dogs, cats, monkeys, and wild animals like fox and jackals. Rabies is caused by rhabdovirus which is present in the saliva of rabid animals and is transmitted through wounds and cuts in skin or mucous membrane after animal bite. Most common cause of rabies or animal bite in urban areas is dog bite **[**8**]**. In rabies endemic country like India, every rabid animal bite is potentially suspected as rabid exposure. Wound washing with soap/detergent and water, followed by early and complete post exposure prophylaxis, including compliance to complete the course of vaccination, will prevent rabies, even after high-risk exposure to potentially rabid animals **[**9**]**.

WHO in collaboration with global alliance for rabies control has target to eliminate dog mediated human rabies by 2030. Knowledge regarding epidemiology and trend of rabies cases will be helpful to achieve this target of elimination. Such studies will also increase the understanding of rabies for primary physicians who are dealing with such cases on regular basis. Better understanding of the disease will be helpful in planning effective preventive and curative measures, especially in rabies endemic areas **[**10,11**]**.

Although various studies have been conducted on animal bites in different parts of India, there is a paucity of literature regarding the epidemiological pattern and trend analysis of animal bite cases in Hilly areas. Hence, this study was concerned in finding the epidemiological facts of animal bite cases registered in Anti-rabies clinic of tertiary care hospital of Srinagar Uttarakhand.

Methodology

It was hospital based, retrospective study, in which all the animal bite cases who were reported to HNB Base hospital Srinagar Uttarakhand were included in this study. Total sample size was 624 of animal bite cases and study period was for 2 years from February 2011 to March 2013.

In sample technique, after the obtaining permission from college dean and ethical committee, the information collected from HNB base hospital- medical record section on animal bite cases as well as regarding PEP. After that data was tabulated and analysed using Microsoft excel.

Study Design

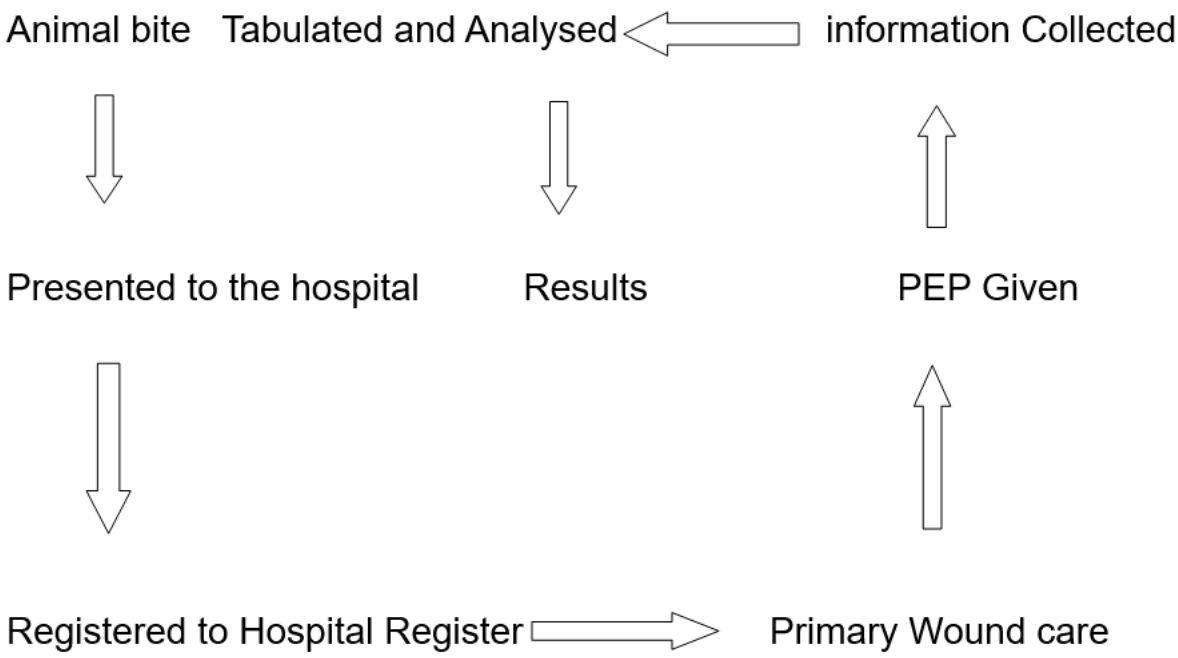

Figure 1, Shows representation of study design.

Results

In our study, Figure 2, after interpretation of data from 2011 to 2013, it was found that maximum number of animal bite cases were due to dog bite (90.06%) followed by monkey bite (5.12%), followed by bear bite 2.8% followed by others like foxes, jackals, wild cats etc.

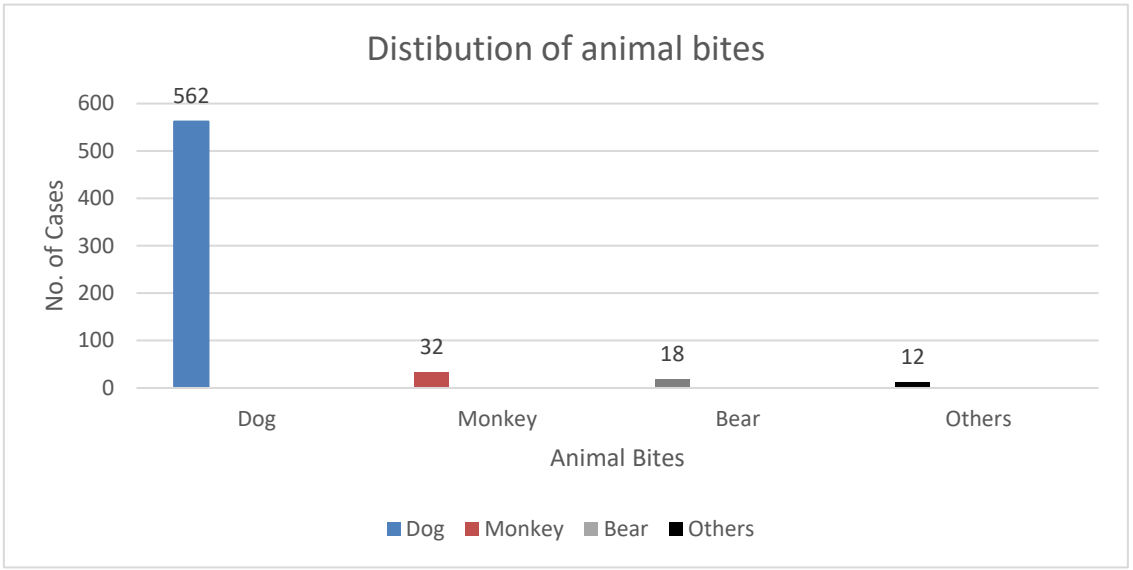

Figure 3, shows the distribution of gender in animal bite cases. Mainly males are affected 82% as compared to female which were 18%.

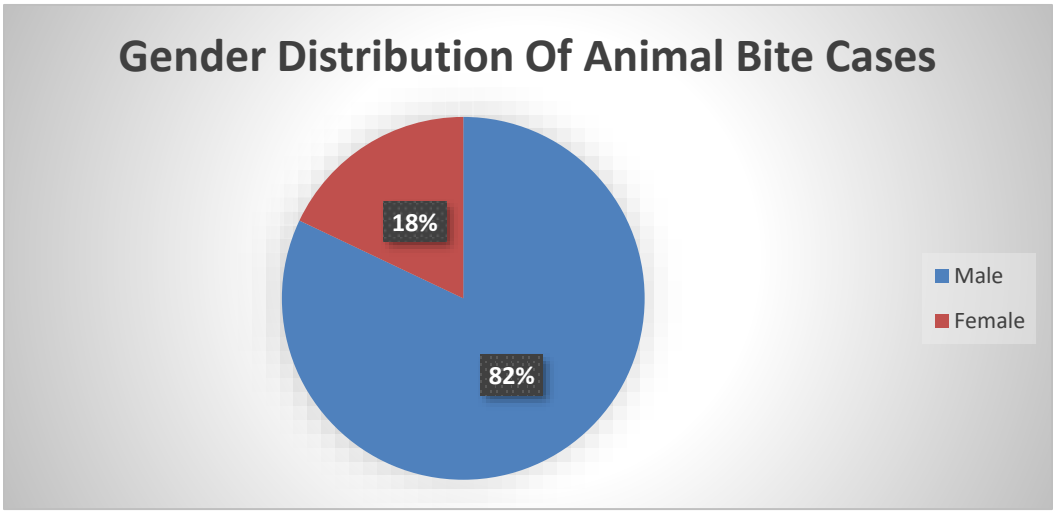

Figure 4 shows the distribution of animal bites in different age groups. As the most of the animal bite affected cases (45%) were of age 15-44 years, 25% were of age group 05-14 years, 18% were of 45-60 years age group and rest 12% were include more than 60 or children less than 5 years.

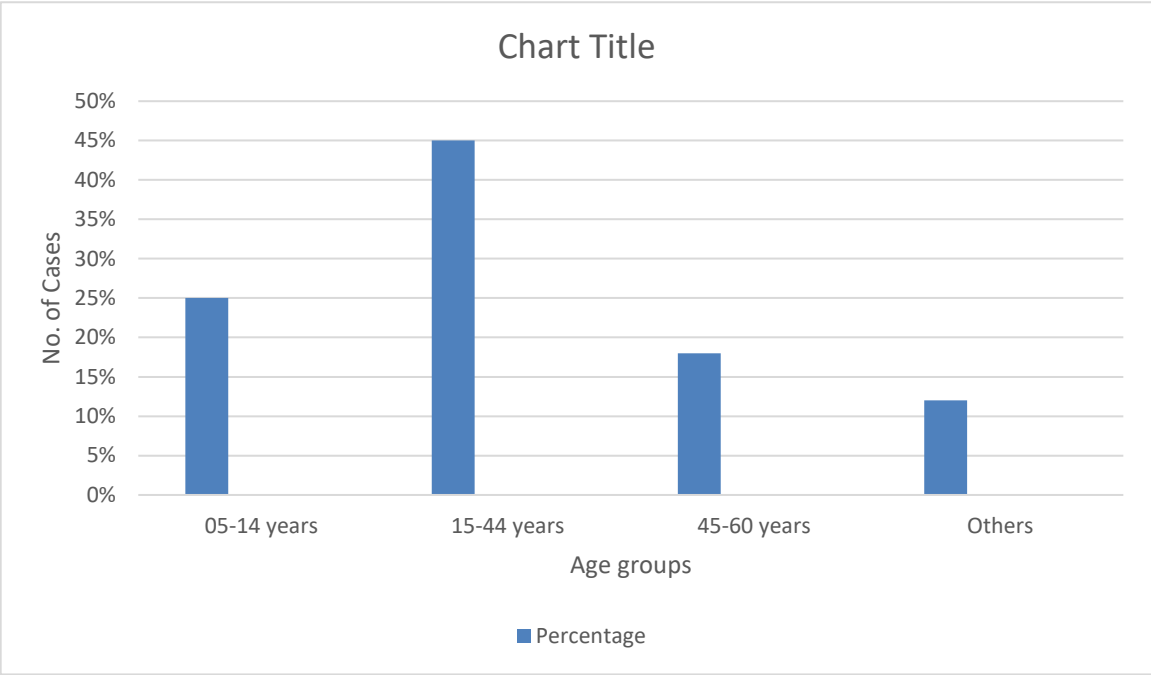

Figure 5, On representation it was found that number of animal bite cases was maximum in the months of march, April, and May and maximum in (month of April 112/624). There was reduction in frequency of animal bite cases in rainy season (month of June–July).

Vaccination course	No. of cases	Percentage
1 Dose	124	19.87%
3 Doses	439	70.35%
5 Doses	61	9.78%

Table No.1, Shows the vaccination course for post exposure prophylaxis in the animal bite cases. Mostly cases receive 3 doses of vaccination.

Discussion

In this study, out of 624 cases, it was found that majority of animal bite cases were due to dog (90.06%) followed by Monkey (5.12%), followed by bear (2.8%) during the period of 2011 to 2013. This was similar to findings reported by Sudarshan et al. [5] in a multicenter study, Masthi et al. [12] in Karnataka, Jyoti et al. [13] in Haryana, Bashir K et al. [14] in Kashmir, Ichhpujani RL et al. 15] in a multicenter study in India, Rana et al. [16] in Bangladesh and Jethani et al. [17] in new Delhi . Out of 624 cases, (5.12%) cases were due to monkey bites. This may be due to the fact that residential area is surrounded by forest and hilly area. Our finding was supported by multicentric study done by Ichhpujani RL et al., [15] in which 3.2% animal bite cases were due to monkeys.

In our study Males (82%) were affected due to animal bite as compared to Females (18%), this is supported by Sudarshan et al. [5] where 72% male were affected as compared to female 27% and Marathe et al. [18]

As our study demographic area was hilly region so most of the active young people were affected as they are involved in outdoor activities. In our study mostly the age group affected belongs to 15-44 years (45%), 05-14 years (25%), similar finding in study of Sudarshan et al., [5] Marathe et al. [18] Abdulmoghni RT et al. [19]

On seasonal analysis of animal bite cases, it was found that animal bite cases started rising from the month of March, that is, arrival of spring season, and there is a slight dip in cases after May till September, that is, in monsoon season, and again there is rise in cases in the autumn season. This can be attributed to the fact that during spring season, there is increased outdoor activity of people specially children and adolescents playing in open areas and during monsoon season and winter, outdoor activities are decreased resulting in slight dip in cases. Similar trend was seen in studies done by Jethani S et al., [17] Saleem SM et al., [20] Masthi et al., [12] Thahaby et al., [22] and Bashir et al. [13] Studies done by Punguyire Damien et al. [21] in Ghana, Abubakar et al. [23] in Nigeria, and Ishaya et al. [24] in South Africa reported high number of cases in January to March and July to September. This difference may be due to different seasonal pattern and environmental condition in African countries. However, this study had certain limitations like small sample size, short duration of the study, missing of sociodemographic data and bias due to secondary data use from the records.

The information which is provided by our study is crucial to direct further long-term research to have a deeper insight of human rabies and factors associated with it. Such different demographic study will be a stepping stone in achieving global elimination of human rabies

Conclusion

Dogs are the main cause (90%) of animal bites, though it is hilly region. This study concludes that animal bite cases are rising over the years and dog bites are most common animal bite cases in Pauri Garhwal Uttrakhand. Monkey bite cases are also significantly in community. There is need of strengthening preventive measures for controlling animal bites in the study area. Logistics and vaccine supply can be managed effectively by the hospitals looking at the seasonal trends of animal bite cases. Frequent Information Education & Communication (IEC) activities should be organized at different levels for creating awareness among people regarding prevention of animal bite cases. Animal components like population survey of dogs, dog vaccination, and population management of dogs under National Rabies Control Program should be strictly implemented.

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