

Title: **Analysis of deaths due to Rabies in Assam-A record based study**

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Keywords Rabies, Assam, death, fatal communicable disease.

Abstract

Despite being one of the most fatal communicable disease, Rabies is still a neglected tropical disease in the world. In India, Rabies still continues to be a disease of major concern due to lack of health care infrastructure and inadequate knowledge among the public. Also, the common myths and misconceptions regarding Rabies hinder the timely measures to be taken. In Assam, approximately 50000 dog bite cases are registered annually. Considerable risk of Rabies deaths among these cases are due to unawareness regarding serious nature of this disease. The present record based cross-sectional study was carried out in the month of May, 2022. Data on Rabies deaths for a period of 3 years from January 2019 to December 2021 from different districts of Assam were obtained from the IDSP cell, National Health Mission, Assam. About 40% of the Rabies deaths were recorded in children less than 10 years of age. In majority of the cases (95%), dog was the biting animal. About 80% of the death cases had not taken any Post Exposure Prophylaxis. In 90% of the deaths, the duration between onset of symptom and death was less than 7 days.

ORIGINAL RESEARCH ARTICLE

Analysis of deaths due to Rabies in Assam-A record based study

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ABSTRACT

Despite being one of the most fatal communicable disease, Rabies is still a neglected tropical disease in the world. In India, Rabies still continues to be a disease of major concern due to lack of health care infrastructure and inadequate knowledge among the public. Also, the common myths and misconceptions regarding Rabies hinder the timely measures to be taken. In Assam, approximately 50000 dog bite cases are registered annually. Considerable risk of Rabies deaths among these cases are due to unawareness regarding serious nature of this disease. The present record based cross-sectional study was carried out in the month of May, 2022. Data on Rabies deaths for a period of 3 years from January 2019 to December 2021 from different districts of Assam were obtained from the IDSP cell, National Health Mission, Assam. About 40% of the Rabies deaths were recorded in children less than 10 years of age. In majority of the cases (95%), dog was the biting animal. About 80% of the death cases had not taken any Post Exposure Prophylaxis. In 90% of the deaths, the duration between onset of symptom and death was less than 7 days.

Keywords: rabies, Assam, death, fatal communicable disease

Introduction

Despite being one of the most fatal communicable disease, Rabies is still a neglected tropical disease in the world. Being primarily a zoonotic disease of dogs, cats, jackals and wolves etc, Rabies can be transmitted to man usually by bites or licks of rabid animals. Dogs are responsible for 90% of human Rabies cases. Approximately 80% of human cases occur in rural area and over 40% deaths occur in children aged under 15 years.

As per World Health Organization (WHO) report, 2021 Rabies infection causes tens of thousands of death every year mainly in Asia and Africa. In India, Rabies still continues to be a disease of major concern due to lack of health care infrastructure and inadequate knowledge among the public. Also, the common myths and misconceptions regarding Rabies hinder the timely measures to be taken.

In Assam, approximately 50000 dog bite cases are registered annually. Considerable risk of Rabies deaths among these cases are due to unawareness regarding serious nature of this disease. In this background the study is undertaken to analyse the deaths due to Rabies in Assam.

Materials and Methods

The present record based cross-sectional study was carried out in the month of May, 2022. Data on Rabies deaths for a period of 3 years from January 2019 to December 2021 from different districts of Assam were obtained from the IDSP cell, National Health Mission, Assam. A total number of 20 Rabies deaths were enrolled in the study. Privacy and confidentiality of personal information was maintained in every step of the study and the results were presented in aggregate form without individual information. The findings of the study were presented as percentage and graphs.

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Results

Table 1- Distribution of Rabies death cases according to their Socio-demographic characteristics

Socio Demographic Variables		Frequency	Percentage
Age	<10 years	8	40
	10-19 years	1	5
	20-29 years	4	20
	30-39 years	4	20
	>40 years	3	15
Gender	Male	11	55
	Female	9	45
Religion	Hindu	18	90
	Muslim	2	10
Place of Residence	Rural	19	95
	Urban	1	5

Table 2- Distribution of Rabies deaths according to biting animal

Biting Animal	Number of deaths	Percentage
Dog	19	95
Others	1	5

Table 3- Distribution of Rabies deaths according to category of bite

Category of Bite	Number	Percentage
Category I	0	-
Category II	2	10
Category III	16	80
Not Known	2	10

Table 4- Distribution of Rabies deaths according to Post Exposure Prophylaxis (PEP) status

Post Exposure Prophylaxis (PEP) status	Number	Percentage
Complete	0	-
Partial	0	-
None	16	80
PEP Status not known	4	20

Table 5- Distribution of Rabies deaths according to Place of Death

Place of death	Number of deaths	Percentage
Death at Hospital	11	55
Death at Home	9	45

Table 6- Distribution of Rabies deaths according to duration between animal bite and onset of symptoms (n=19)

Duration (in months)	Number	Percentage
<1 month	2	10.5
1-2 months	7	36.8
2-3 months	8	42.1
3-4 months	1	5.3
>4 months	1	5.3

Table 7- Distribution of Rabies deaths according to duration between onset of symptoms and death

Duration	Number of deaths	Percentage
<7 days	18	90
>7 days	2	10

Discussion

Table 1 shows distribution of Rabies death cases according to their Socio-demographic characteristics. In our study, 40% of the Rabies deaths were recorded in children less than 10 years of age. This may be due to the fact that during play or other outdoor activities, children are more prone to dog bite and out of fear, they may not reveal the incident to their parents. Genderwise, out of total 20 Rabies deaths 55% were males and 45% were females. Majority of the Rabies death cases were reported from the rural areas (95%).

Table 2 shows distribution of Rabies deaths according to biting animal. It was seen that in majority of the cases (95%), dog was the biting animal. In one death case, male, 38 years of age was owner of slaughterhouse, mainly handling cow meat. No history of Dog and other animal bite was given by the patient earlier, as reported by the family member during investigation. Gupta S et. al. in their study² (2021) done in Madhya Pradesh found that most common biting animal was dog (97.33%). Vijayan C et. al. in their study³ (2016) conducted in Puducherry, India also found that most of the human bites were due to dogs (96.2%).

Table 3 shows distribution of Rabies deaths according to category of bite. Majority of the dog bites (80%) were of Category III ie. single or multiple transdermal bites or scratches. In 10% of the deaths, category of contact with rabid animal was Category II. In the remaining 10% of the deaths, the Category could not be ascertained. In a study⁴ done in Bangalore city in 2016, Karthik C and colleagues also found that about 60.6% cases of dog bite were of Category III.

Table 4 shows distribution of Rabies deaths according to Post Exposure Prophylaxis (PEP) status. About 80% of the death cases had not taken any Post Exposure Prophylaxis. Post Exposure Prophylaxis status was not known in the remaining 20% of the death cases. Kulkarni Petal. in their study⁵ (2017) conducted in Mysore city, Karnataka found that 41% had received anti rabies vaccines of whom only 14.6% received full course.

Table 5 shows distribution of Rabies deaths according to Place of Death. Out of total 20 deaths, 55% deaths occurred in the hospital, while 45% deaths occurred in the home.

It is well established that, the incubation period of Rabies in man is highly variable, commonly 1-3 months following exposure but may vary from 7 days to many years. In our study, table 6 shows that in 42.1% of the deaths, the incubation period was 2-3 months, followed by 1-2 months in 36.8% of the deaths. In general incubation period tends to be shorter in severe exposures and bites on face, head, neck, upper extremities and bites by wild animals. The incubation period depends on the site of bite, severity of bite, number of wounds, amount of virus injected, protection provided by the clothing and treated undertaken.⁶ Mohammad K and Gupta P (2018), in their study⁷ conducted in Lucknow found that in majority (58.57%) of the cases the incubation period was 1–6 months.

Table 7 shows distribution of Rabies deaths according to duration between onset of symptoms and death. In 90% of the deaths, the duration between onset of symptom and death was less than 7 days.

Conclusion

With more than 80% of people living in rural areas in Assam, there is easy accessibility of the animals most commonly dogs to come in contact with human. There is still lack of knowledge among people regarding dog bite and Rabies. Also, there are various myths and misconceptions about animal bite and Rabies prevailing among people. As males are mostly involved in the outdoor activities, they are more exposed to dog bites. There is urgent need of awareness generation among the people regarding consequences of dog bite and timely treatment. The health personnels as well as the Government have a crucial role in this regard.

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