

## PROFILE OF HUMAN RABIES CASES ADMITTED AT EPIDEMIC DISEASES HOSPITAL, BANGALORE, INDIA

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**ABSTRACT: OBJECTIVES:** The present study was carried out with the following objectives 1. To describe the socio demographic profile of human rabies cases 2. To describe the pattern of clinical presentation 3. To assess the quality of data in the case record forms of the human rabies cases **TYPE OF STUDY:** Case Record Analysis. **MATERIAL AND METHODS:** Case records of suspect human rabies cases. Data analyzed using proportions. **STUDY PERIOD:** April 2009 to March 2012. **RESULTS:** 75 suspected human rabies cases were admitted to the epidemic diseases hospital during the study period. 64 (85.33%) of the cases were from the state of Karnataka, 11 (14.67%) were from Andhra Pradesh and Tamilnadu. 61 (81.33%) were males. 17 (22.67%) were children aged  $\leq 15$  years. 44 (58.67%) of the cases were from rural areas. In 71 (94.67%) of the victims, the exposure was to dogs. Mean duration of time since bite to seeking admission was 118 days. Category of the wound was documented for 43 (57.33%) of the 75 cases. Of these, 40 (93.02%) had category III exposure. 61 (81.33%) of the case records had data regarding wound toilet and only 12 (19.68%) of the victims had performed wound toilet. Only 1 (1.47%) of the victims had received rabies immunoglobulin, but had not completed the scheduled vaccination regimen. 43 (67.19%) had not received any post exposure prophylaxis. Clinical signs and symptoms of rabies had been entered in 68 (90.67%) of the case records, and all had hydrophobia. **CONCLUSION:** Most of the suspected human rabies cases admitted had not received post exposure prophylaxis or had received incomplete post exposure prophylaxis. The data entered into the case record forms of the patients was mostly incomplete.

**KEYWORDS:** Rabies, Post exposure prophylaxis, hydrophobia.

**INTRODUCTION:** Rabies continues to be a major public health problem in Asia and Africa<sup>1</sup>. According to WHO, 55, 000 deaths are estimated to occur every year due to rabies<sup>1</sup>. Of these 55, 000 deaths, 20, 000 (36%) is said to occur in India alone from approximately 17.4 million animal bites.<sup>2</sup> Other studies have given different estimates for the number of deaths due to rabies in India.<sup>3,4</sup> Official figures of rabies deaths in India are low and are in a few hundreds.<sup>5,6</sup> This low figure quoted by the government of India is due to the lacunae in the reporting system as rabies is not a notifiable disease in India.<sup>5</sup>

The surveillance system is weak and lacks a coordinated and cohesive approach. Most of the human rabies cases in India occur in rural areas and majority of the human rabies deaths may not come to the notice of the health authorities due to various reasons<sup>7,8</sup>. Studies have also revealed that the case record forms of suspected rabies cases admitted into the infectious diseases hospitals in India are lacking in clinical and epidemiological data.<sup>7</sup>

The epidemic diseases hospital at Bangalore is one of the hospitals to which suspected human rabies cases are referred, from not only the state of Karnataka but also from the adjacent districts of neighboring states of Tamil Nadu and Andhra Pradesh.

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With this background, we conducted the current study with the following objectives:

1. To describe the socio demographic profile of human rabies cases admitted to epidemic diseases hospital, Bangalore.
2. To describe the pattern of clinical profile of the suspected human rabies cases.
3. To assess the quality of data in the case record forms.

**MATERIAL AND METHODS:** The present study was a hospital based retrospective study (Case record analysis). Case records of all suspected human rabies cases admitted in the epidemic diseases hospital, Bangalore for a period of three years (April 2009 to March 2012) were analyzed. Data was entered into MS Excel, analyzed and is presented as proportions.

**RESULTS:** A total of 75 suspected human rabies cases were admitted to the epidemic diseases hospital, Bangalore from April 2009 to March 2012, of these 64 (85.3%) cases were from the state of Karnataka, 11 (14.7%) were from neighboring states of Andhra Pradesh and Tamil Nadu. 25 human rabies cases were registered at the epidemic diseases hospital in the year 2009-10, 21 cases in the year 2010-11 and 29 cases were registered in 2011-12.

Age in years	Male	Percentage	Female	Percentage	Total (%)
≤ 15	13	21.31	04	28.57	17(22.67)
15-45	26	42.62	05	35.71	31(41.33)
>45	22	36.06	05	35.71	27(36)
<b>Total</b>	<b>61</b>	<b>81.33</b>	<b>14</b>	<b>18.77</b>	<b>75(100)</b>

Table 1: Age and sex wise distribution of rabies cases admitted at epidemic diseases hospital, Bangalore

61 (81.33%) of the cases were males and 17(22.67%) were children aged ≤ 15 years (Table 1). 44 (58.67%) of the cases were from rural areas. 71 (94.6%) of the victims were exposed to dogs, 2 (2.7%) were exposed to cats and 1 (1.33%) was exposed to mongoose and 1 (1.33%) gave the history of having been bitten by a wild sheep. Among the 71 cases who were exposed to dogs, 56 (78.9%) were exposed to strays and 15 (21.1%) were exposed to pets. 12 (80%) of the victims who were exposed to pet dogs did not know whether the pet was vaccinated whereas 3(20%) were exposed to unvaccinated pets. Status of the biting animal was entered in only 35 (46.67%) of the case records. Status of 12 (34.29%) of the biting animal was stated as unknown, 8 (22.86%) had died and 12 (34.29%) had been killed. Surprisingly, 3(8.57%) dogs that had bitten the victims were stated to be alive.

The category of wound was ascertained in only 43(57.3%) of the victims. 40(93%) of the cases had category III exposure and 3(7%) had category II exposure. Site of exposure had been entered in the case record forms of 41(54.7%) victims only. Among the cases with entry of site of exposure, 26(63.4%) were exposed over the lower limb, 11(26.8%) over the upper limb and 4(9.8%) were exposed over the face. No entries about multiple sites of exposure had been made in the case records.

In 61(81%) of the case sheets, entry about wound toilet had been made and only 12(19.7%) of the 61 cases for whom record was available had performed wound toilet.

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In 64(85.3%) of the 75 case records, the history of post exposure prophylaxis had been entered. 43(67.2%) of the cases had not received any post exposure prophylaxis. Route of administration of the vaccine had not been documented in any of the cases (both IM and ID routes are being used in the three states). 4(6.3%) cases had received 4 doses of the vaccine and 1(1.5%) case had received 5 doses of the vaccine. 1(1.5%) of the victims had received rabies immunoglobulin but had taken only one dose of the vaccine.

Clinical signs and symptoms were entered in 68(90.7%) of the case sheets. All 68(100%) of the cases for whom the details were recorded had hydrophobia, 59 had hydrophobia and aerophobia, 19 had hydrophobia, aerophobia and breathlessness. 19 had hydrophobia, aerophobia, breathlessness and fever. 10 cases had presented with hydrophobia, aerophobia and parasthesia, 2 had hydrophobia, aerophobia, breathlessness, fever and convulsions. 1 case had hydrophobia and photophobia.

Time since exposure to seeking admission (Days)	Number	Percentage
7-30	11	17.74
31-60	17	27.4
61-180	24	38.70
181-365	5	8.06
≥1 year	5	8.06
<b>Total</b>	<b>62</b>	<b>100</b>

Table 2: Time between exposure and seeking of admission to the hospital

Time since bite to seeking admission at hospital was  $117.89 \pm 80.48$  days with a range of 7 days to 1 Year 6 months (Table 2). Average time of death from admission was  $25.98 \pm 21.3$  hrs. (Range: 30 minutes to 6 days 19 hrs. 15 minutes). Of the 75 victims, 26(34.7%) were discharged against medical advice. Cause of death was not mentioned in any of the case sheets. Postmortem confirmation of clinical diagnosis was not done in any of the cases.

**DISCUSSION:** It was noted in the present study that human rabies cases occurred throughout the year and there was no seasonal variation in the pattern of admission at the Epidemic Diseases Hospital. This is in contrast to an earlier study conducted in Lucknow which had observed seasonal variation in the pattern of admission of human rabies cases.<sup>8</sup>

Majority of the human rabies cases were males. This is similar to observations made in other studies.<sup>7, 8, 9</sup> Children aged less than or equal to 15 years constituted 22.7% of the cases which is similar to the observations made by some of the authors in previous studies at different places in India.<sup>8, 10</sup> But, this is in contrast to another study which had observed that majority of the rabies victims were children.<sup>11</sup> The present study revealed that the majority of the cases were from rural areas. Similar observations were made in studies conducted at Lucknow<sup>8</sup> and Amritsar.<sup>10</sup>

Even the WHO – APCRI survey reveals that majority of the rabies cases were from rural areas.<sup>2</sup> However, a study conducted in Delhi had observed that most of the rabies cases were from urban areas.<sup>9</sup> A majority of the cases in the present study, i.e., 71 (94.67%) gave the history of exposure to dogs and 3 were supposedly alive, an observation recorded in studies done by Singh J et

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al<sup>7</sup> and Chhabra et al.<sup>9</sup> It was noted that a majority of the cases in the present study had not performed the wound toilet as was also observed in other studies.<sup>7,10</sup>

One case had received rabies immunoglobulin, but had received only one dose of vaccine. This reflects the situation in India as rabies immunoglobulins are rarely advised or administered to the animal bite victims; a fact corroborated by the APCRI-WHO survey<sup>2</sup> and also observed in other studies.<sup>9,11</sup> A majority of the cases (67.2%) had not received any post exposure prophylaxis which is a reflection on the lack of awareness and accessibility to the vaccines. Similar observations of incomplete or no vaccination in the rabies cases has been observed by Singh J et al<sup>7</sup> and Chhabra et al<sup>9</sup> in their studies.

It was noted in the present study that the data entered in the case sheets were deficient in many clinical and epidemiological details which is in accordance to the study of Singh J et al.<sup>7</sup> The most consistent data recorded was the clinical signs and symptoms (90.7% of the case records) and all the cases showed signs and symptoms consistent with human rabies. The range of incubation of rabies in the cases was from 7 days to 1 year and 6 months following exposure. On admission to the hospital the average survival period was 25.98 hours

**CONCLUSION:** From the present study it is evident that human rabies cases are endemic in the area and the cases occur all through the year and none of the suspected human rabies cases admitted had received post exposure prophylaxis and in those who had received post exposure prophylaxis the PEP was incomplete. The high mortality in India due to rabies is attributed to lack of awareness of PEP for animal bites and also lack of access to vaccine and immunoglobulin. Our study also shows that majority of the cases had not received any PEP, but whether due to ignorance or due to lack of access can only be speculated. The data entered into the case record forms of the patients was mostly incomplete.

### RECOMMENDATIONS:

1. Rabies should be made a notifiable disease in India at the earliest.
2. Standard case record forms should be used in collecting data pertaining to suspected human rabies cases at the hospitals to ensure uniformity of data.

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