International Journal of Community Medicine and Public Health
*Lilare RR et al. Int J Community Med Public Health. 2018 Jul;5(7):3045-3048*
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20182646

**Original Research Article**

# Compliance of post exposure rabies vaccination among patients attending anti-rabies OPD in the Government Medical College, Nagpur

**Rushali Rajan Lilare[1], Neeta Rathod[2]*, Uday W. Narlawar[1]**

Department of Community medicine, [1]Government Medical College, Nagpur, [2]Government Medical College, Chandrapur, Maharashtra, India

**Received:** 17 April 2018
**Revised:** 24 May 2018
**Accepted:** 25 May 2018

***Correspondence:**
Dr. Neeta Rathod,
E-mail: rushalililare@gmail.com



## ABSTRACT

**Background:** Rabies is a zoonotic disease, caused by the rabies virus, of the *Lyssavirus* genus, within the family *Rhabdoviridae*. The study was designed with the objective to assess the compliance of post exposure rabies vaccination among patients attending anti-rabies OPD in the government medical college, Nagpur.
**Methods:** The study was retrospective record based study conducted from 1st July 2016 to 30th June 2017. The data was collected from the anti-rabies vaccination OPD register and analysed.
**Results:** In the present study there were total 873 study subjects with male preponderance (66%) over female (34%). About 35.5%, 27.9%, 18.6%, 16.6% and 13.7% of subjects were in the age between 1-20years, 21-40 years, 41-60 years, 61-80 years and above 80 years respectively. Majority 91.2% were bitten by dog. Majority 52.6% followed by 46.6% and 0.80% were in anti-rabies category III, II and I respectively. Majority 73.5% subjects had completed 5 dose of anti-rabies vaccination given by intra muscular route. Only 27.8% of subjects had not washed the wound excluding anti rabies category I.
**Conclusions:** In our study majority of animal bite was by dog between 1-20 years. More than 50% of subjects were in Cat III. More than70% subjects had completed 5 dose of anti-rabies vaccination.

**Keywords:** Zoonotic disease, Anti-rabies vaccination

## INTRODUCTION

Rabies (hydrophobia) is one of the neglected tropical diseases and also a zoonotic disease of warm blooded animals particularly of carnivorous such as dogs, cats, jackals and wolves affecting more than 100 countries and territories. It is the only communicable disease that is always fatal. The virus claims an estimated 59000 human lives annually, mostly among underserved populations in Africa and Asia. That's about 1 person dying of rabies every 9 minutes.[1]

Globally, rabies deaths are rarely reported and children between the ages of 5–14 years are frequent victims. Over 95% of rabies deaths in humans result from virus transmission through the bites of infected dogs.[2] Every year, more than 15 million people worldwide receive a post-bite vaccination. This is estimated to prevent hundreds of thousands of rabies deaths annually. In the absence of post exposure prophylaxis approx. 327000 persons would die from rabies in Asia & Africa each year. In India approx. 20,000 deaths (about 2/100 000 population at risk) are estimated to occur annually.[3]

WHO, the World Organisation for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO) and the Global Alliance for Rabies Control (GARC) have established a global "United Against Rabies" collaboration to provide a common strategy to achieve "Zero human rabies deaths by 2030".

With this background an attempt has been made to see the compliance of post exposure rabies vaccination among patients attending anti-rabies OPD in the Government Medical College, Nagpur.

***Aim and objectives***

To assess the compliance of post exposure rabies vaccination among patients attending anti - rabies OPD in the government medical college, Nagpur.

## METHODS

The present study was record based retrospective study among the patients who had attended the anti - rabies OPD during the period from 1st July 2016 to 30th June 2017. The records of patients profile has been obtained from the ARV OPD record book for the above mention period. The anti – rabies vaccination was given to the patient following Essen regime. The data obtained were analysed using Microsoft excel 2010. Permission from the respective authority along with Institutional Ethics Committee was obtained.

## RESULTS

The present study was conducted in the ARV OPD of Government Medical College retrospectively for the duration of one year, there were total 873 enrolled who were given anti rabies vaccination following Essen regime and Immunoglobulin according to the anti rabies category. About 578 (66%) were male and 295(34%) were female. Majority of study subjects 310 (35.5%) were in the age group between 1 to 20 years (Table 1).

**Table 1: Profile of animal bite victims.**

| | No | % |
|---|---|---|
| **Gender wise distribution of study subjects** | | |
| Male | 578 | 66 |
| Female | 295 | 34 |
| **Age wise distribution of study subjects** | | |
| 1 to 20 | 310 | 35.5 |
| 21 to 40 | 244 | 27.9 |
| 41 to 60 | 162 | 18.6 |
| 61 to 80 | 145 | 16.6 |
| >80 | 12 | 13.7 |

In our study maximum (91.2%) number of animal bite was by dogs followed by cats (3.4%) (Figure 1).

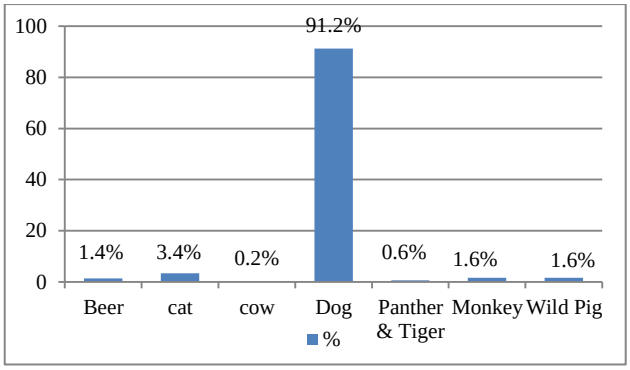


**Figure 1: Distribution of study subject according to animal bite.**

In the present study majority 630 (72.2%) of animal bite victims had washed the wound site among them only 3 (0.48%) subjects had used dettol and 8 (1.27%) had used soap (Figure 2).

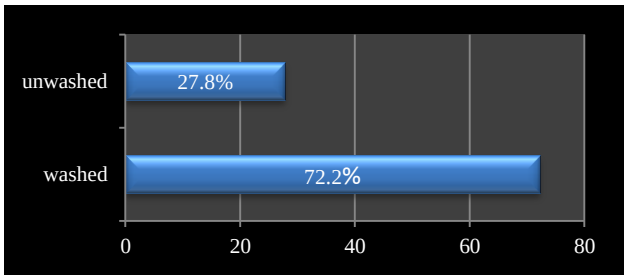


**Figure 2: Distribution of study subjects according to wound management.**

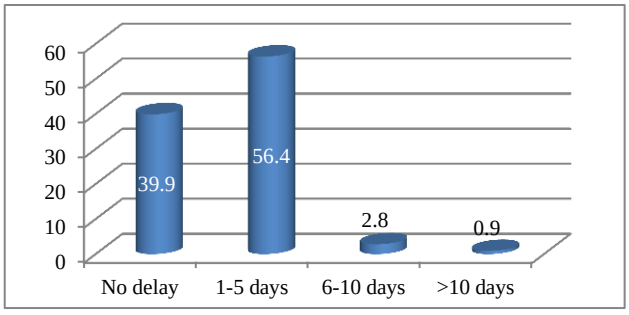


**Figure 3: Distribution of study subjects according to the time of initiation of anti-rabies vaccination.**

The above study reveals that majority 56.4% of subjects had started the anti rabies vaccination between 1-5 days whereas 39.9% had no delay (Figure 3).

**Table 2: Anti-rabies category wise distribution of subjects.**

| Anti-rabies category | No. | % |
|---|---|---|
| **I** | 7 | 0.8 |
| **II** | 407 | 46.6 |
| **III** | 459 | 52.6 |
| **Total** | 873 | 100 |

About 52.6% of subjects were in anti- rabies Cat III followed by 46.6% and 0.8% in Cat II and I respectively (Table 2).

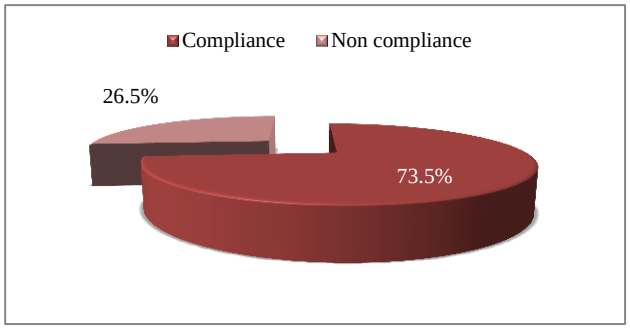


**Figure 4: Distribution of study subjects according to anti-rabies vaccine compliance.**

In the present study 73.5% of study subjects had completed all the five doses of anti-rabies vaccination i.e. had shown the full compliance toward treatment (Figure 4).

## DISCUSSION

In the present study, we had total 873 enrolled who were given anti rabies vaccination following Essen regime and Immunoglobulin according to the anti-rabies category. Majority were male about 66% and 34% were female. Majority of study subjects 35.5% were in the age group between 1 to 20 years. About 91.2% number of animal bite was by dogs and majority 72.2% animal bite victims had washed the wound site. About 56.4% of subjects had started the anti rabies vaccination between 1-5 days whereas 39.9% had no delay. About 52.6% of subjects were in anti- rabies Cat III followed by 46.6% and 0.8% in Cat II and I respectively. Majority 73.5% of study subjects had shown the full compliance toward vaccination.

Anandaraj et al in their study compliance to anti rabies vaccine and animal bite management practices in a rural area of Davangere, Karnataka, India found that majority of the respondents were males 77.1%, aged less than 15 years 60.4%. Among the animal bite victims, 77.1% had Category III bites and all were bitten by dog. Majority of the animal bite victims 63.9% reported to the health facility within 6 hours of the event whereas 23.4% of them reported late beyond 24 hours. Correct wound management practices of washing was observed only in 12.5% of victims. Around 82.6% of the animal bite victims completed the 5-dose antirabies vaccination schedule while 17.4% did not complete the schedule.[4]

In the study by Shankaraiah et al there were two groups, one receiving vaccination via intramuscular route and other via intradermal. About 215 animal bite victims who received intramuscular rabies vaccination (IMRV group) and 521 who received intradermal rabies vaccination (IDRV group). Majority of the bite victims in both the groups were males (65.1% in IMRV group and 68.3% in IDRV group) and most of them were aged below 15 years (41.4% in IMRV group and 45.1% in IDRV group). In both the study populations, dog was the biting animal in majority of the cases (98.5% in IMRV group and 97% in IDRV group). The compliance rate for full course of IMRV was 60% and for IDRV was 77%.[5]

Gudegowda et al found that Out of the total 2815 patients studied, 828 (29.4%) of them belong to <15 years age group. 2168 (77%) were males constituting male: female ratio to 3.4:1. This study shows that 96.69% of patients were bitten by dog. Among those 2815 patients studied, only 25.3% of them reported for treatment within 24 hours of post-exposure. Among the patients studied, 64% had category III exposure and rest of them were category II. The compliance rate to complete course of anti-rabies vaccination was 79.60%.[6]

In the study by Domple et al found that out of 260 dog bite cases. The majority, 30.8% of dog bite cases were from ≤10 years age group. The cases were bitten by 70.4% pet dogs while the remaining bym29.6% stray dogs. Of 260 dog bite cases, 76.5% cases were completed PEP as compared to 23.5% were defaulted PEP.[7]

Nishant et al found that majority 26.85% study subjects were in the age group between 13-25 year. Majority 83.21% were male. About 88% were bitten by dog. Only 55.2% were compliant toward vaccination.[8]

## CONCLUSION

In the present study out of the total study subjects majority were males. Maximum number of victims were bitten by dogs. About 52.6% and 46.6% animal bite victims were in Category III and II respectively. About 73.5% of study subjects had shown the full compliance.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. World Health Organization. Human rabies: 2016 updates and call for data Weekly epidemiological record. Assessed on 25th December 2016.
2. Centres for disease control and prevention (CDC).CDC Newsroom Release. Assessed on 1 February 2018.
3. World Health Organization. Rabies Fact sheet; Updated September 2017. Assessed on 1st January 2018.
4. Anandaraj R, Balu PS. Compliance to anti rabies vaccine and animal bite management practices in a rural area of Davangere, Karnataka, India. Int J Community Med Public Health. 2016;3:170-3.

5. Shankaraiah RH, Rajashekar RA, Veena V, Hanumanthaiah AD. Compliance to anti-rabies vaccination in post-exposure prophylaxis. Indian J Public Health. 2015;59:58-60.
6. Gudegowda KS, Shivalingamurthy RK, Vengatesan S, Sobagiah RT, Krishnappa AK. Compliance to Post Exposure Rabies Vaccination among Patients Attending Anti - Rabies Clinic ina Tertiary Care Hospital, Bengaluru. Ntl J Community Med. 2016;7(10):811- 815.
7. Domple VK, Doibale MK, Sonkar VK, Aswar NR, Khadilkar HA, Jain SR. Treatment compliance of self-reported dog bite cases attending outpatient department of Tertiary Care Hospital, Maharashtra. Int J Med Public Health. 2015;5:297-300.
8. Nikhil Nishant, Dr Lalit Sankhe, Dr Chhaya Rajguru. Anti Rabies Vaccination compliance: A longitudinal study amongst patients attending Anti Rabies Vaccination OPD in a tertiary care hospital. JMSCR. 2018;06(1):32671-6.

**Cite this article as:** Lilare RR, Rathod N, Narlawar UW. Compliance of post exposure rabies vaccination among patients attending anti-rabies OPD in the Government Medical College, Nagpur. Int J Community Med Public Health 2018;5:3045-8.