

Original Research Article

A cross-sectional study of compliance to anti-rabies post exposure prophylaxis among dog bite patients at tertiary care centre

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ABSTRACT

Background: Prevention of rabies is possible by providing the exposed persons with proper post exposure prophylaxis (PEP). Non-compliance to PEP increases mortality. Present study was conducted with objective to assess anti-rabies PEP compliance among dog bite patients.

Methods: A cross sectional study was conducted at anti rabies vaccine (ARV) OPD of tertiary care centre from May 2023 to October 2023 on category II and III dog bite patients. A total sample of 321 patient's data was collected using a convenient sampling technique. A predesigned and pretested questionnaire was used to collect data regarding sociodemographic profile, history of dog bite exposure and compliance to anti rabies PEP. Patients who received full course of ARV as per recommended schedule were considered compliant. Data was entered in Microsoft excel and analysed by using SPSS version 20.0.

Results: Study result showed that out of 321, 52.95% participants were compliant and 47.05% were non-compliant to anti rabies PEP. In most of participants reason for non-compliance to anti rabies PEP was forgetfulness (48.34%) and in 22.51% fear of loss of wages. Association of age group and socioeconomic status with compliance to anti rabies PEP was found to be significant with p value of 0.000012 and 0.036 respectively.

Conclusions: In our study, non-compliance to anti-rabies PEP was high despite availability of free ARV at government healthcare facilities. Counselling for completion of prescribed schedule on recommended dates should be done on first dose of ARV.

Keywords: ARV, Compliance, Dog bite, Non-compliance, Post exposure prophylaxis, Rabies

INTRODUCTION

Rabies is an acute viral zoonotic disease of the central nervous system that affects all warm-blooded animals including mammals and occurs in more than 150 countries and territories.¹ Among infectious diseases, rabies has the highest case fatality rate. The major burden of rabies is attributable to dog mediated transmission of rabies. Globally 26400-61000 deaths occur due to rabies every year of which 95% are due to dog bite.² According to World Health Organization (WHO) statistics, India has between 18000 and 20000 cases of human rabies per year

making it a common occurrence in both rural and urban areas.³ 59.9% of the deaths in Asia and 35% of human rabies annual deaths in the world are accounted for India alone.¹ There is no effective treatment till date. Vaccine is available which 100% effective if taken properly.⁴ Of the >55000 persons who die annually of rabies worldwide, the majority either did not receive post exposure prophylaxis (PEP), received some form of PEP (usually without RIG) after substantial delays or were administered PEP according to schedules that deviated substantially from current WHO recommendations.⁵ Prevention of rabies is possible by providing the exposed

persons with proper PEP and it includes wound toilet, post exposure vaccination and administration of rabies immunoglobulin.⁶ The present study was conducted with an objective to assess the compliance to anti-rabies post exposure prophylaxis among dog bite patients at tertiary care center.

METHODS

A cross-sectional study was conducted at ARV OPD of Shri Vasantrao Naik Government Medical College, Yavatmal, Maharashtra from May 2023 to October 2023 on all category II and III dog bite patients. As per the study conducted by Domple et al in Nanded the prevalence of compliance to full course of ARV among dog bite patients was 76.5%.⁶ Considering this prevalence, the calculated sample size with Open Epi Info Software and with 10% nonresponse rate was 316. A of total 321 category II and category III dog bite patient's data were collected during August 2023 to September 2023 using convenient sampling technique. All category II and category III dog bite patients who gave consent for participation were included in the study. Category I patients, animal bite patients other than dog bite were

excluded. The study approved by institutional ethical committee, informed consent was taken from patients and confidentiality of the data was ensured. A predesigned and pretested questionnaire was used to collect data regarding sociodemographic profile, history of dog bite exposure and compliance to anti rabies post exposure prophylaxis. Patients who received full course of ARV as per recommended schedule were considered compliant and patients who had not completed all the scheduled doses as per recommendations were considered as non-compliant to the PEP. Data was entered in Microsoft excel and analysed by using SPSS version 20.0 for frequency, mean, standard deviation, percentages, Chi-square test. The p value was considered significant if it was less than 0.05.

RESULTS

Table 1 shows that most of the participants were in the age group of 0-15 years (36.76%) followed by 23.67% in the age group of 16-30 years. Association between age group and compliance to anti rabies post exposure prophylaxis was found to be significant with p value of 0.000012.

Table 1: Association between sociodemographic characteristics and compliance of anti-rabies PEP (n=321).

Sociodemographic characteristics			Compliance		P value
Variable	Frequency	Percentages	Yes (%)	No (%)	
Age group (in years)					
0-15	118	36.76	78 (66.10)	40 (33.90)	0.000012
16-30	76	23.67	21 (27.63)	55 (72.37)	
31-45	56	14.33	27 (48.21)	29 (51.79)	
46-60	40	12.46	22 (55)	18 (45)	
>60	31	12.77	17 (54.83)	14 (45.17)	
Gender					
Male	240	74.76	129 (53.75)	111 (46.25)	0.625
Female	81	25.24	41 (50.61)	40 (49.39)	
Residence					
Rural	96	29.90	46 (47.91)	50 (52.09)	0.591
Urban	225	70.10	124 (55.11)	101 (44.89)	
Socioeconomic status					
Class I	26	8.09	20 (76.92)	6 (23.08)	0.036
Class II	58	18.06	24 (41.37)	34 (58.63)	
Class III	106	33.02	56 (52.83)	50 (47.17)	
Class IV	92	28.66	52 (56.52)	40 (43.48)	
Class V	39	12.14	18 (46.15)	21 (53.85)	
Total	321	100			

Most of the participants were male (74.76%) and 25.24% were female. Association between gender and compliance to anti rabies post exposure prophylaxis was not found to be significant. 29.90% participants were from rural area and 70.10% participants were from urban area. Association between residence and compliance to anti

rabies post exposure prophylaxis was not found to be significant (Table 1).

Most of participants were from class III socioeconomic status (33.02%) followed by class IV (28.66%) and 18.06% from class II socioeconomic status. Association

between socioeconomic status and compliance to anti rabies post exposure prophylaxis was found to be significant with p value of 0.036 (Table 1).

Table 2: Distribution of study participants according to characteristics of dog bite exposure (n=321).

Variables	Frequency	Percentages
Type of dog		
Pet	122	38
Stray	199	62
Circumstance of bite		
Provoked	4	1.24
Unprovoked	317	98.76
Category of wound		
Category II	59	18.39
Category III	262	81.61
Total	321	100

Table 2 shows that most of participants were bitten by stray dog (62%) and 38% was bitten by pet dog. In 98.76% participants there was unprovoked bite while 1.24% participants had provoked bite. Most of participants (81.61%) has category III bite and 18.39% participants had category II bite (Table 2).

Table 3: Distribution of study participants according to wound washing practice following dog bite (n=321).

Variables	Frequency	Percentage
Wound washing done	201	62.61
Wound washing not done	120	37.39
Total	321	100

Table 3 shows that 62.61% participants washed their wound after dog bite before coming to hospital and 37.39% had not washed their wound after dog bite before coming to hospital (Table 3).

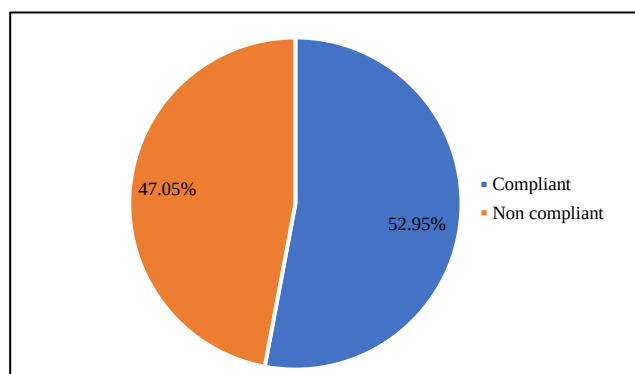


Figure 1: Distribution of study participants according to compliance to anti-rabies post exposure prophylaxis.

Figure 1 shows that 52.95% participants were compliant and 47.05% participants were non-compliant to anti rabies post exposure prophylaxis (Figure 1).

Table 4 shows that in most of participants reason for non-compliance to anti rabies post exposure prophylaxis was forgetfulness (48.34%) followed by fear of loss of wages in 22.51% participants (Table 4).

Table 4: Distribution of study participants according to reason for non-compliance to anti rabies post exposure prophylaxis (n=151).

Reason for non-compliance	Frequency	Percentages
Due to school	16	10.59
Fear of loss of wages	34	22.51
Forgetfulness	73	48.34
Out of station	12	7.94
Admit in ward	5	3.31
NA vaccine at periphery	11	7.28
Total	151	100

DISCUSSION

This study showed that 18.39% participants had category II bite and 81.61% participants had category III bite. Similar findings were reported by Panda et al where 19.2% participants had category II bite and 80.8% participants had category III bite.¹ Out of the 321 study participants, 201 (62.61%) reported to have washed their wounds before coming to the health facility. Similar findings were reported by Shankaraiah et al in their study that following animal bite, wound washing was done in only 68.2% of intra-dermal rabies vaccination (IDRV) group subjects and 66.0% of intra-muscular rabies vaccination (IMRV) group subjects.⁷ Venkatesan et al and Lilare et al reported in their studies that 64% and 72.2% of animal bite victims had washed the wound site, respectively.^{8,9} However, the findings of the present study were different from those reported by Jain et al and Salve et al who reported only 18.7% and 24.1% patients, respectively, had washed their wounds with running water or water with soap before attending the ARV clinic.^{10,11} This study showed that 52.95% participants were compliant. Similar findings were reported by Panda et al, Sahu et al, Vinay et al and Malkar et al who reported 47.8%, 52.3%, 53.2% and 42.81% participants were compliant to anti rabies post exposure prophylaxis respectively.^{1,12-14} Higher compliance was reported in the study by Dhaduk et al where 68% of the victims had completed the full course of ARV schedule within 28 days from the day of bite.¹⁵ Similar findings were also reported by Domple et al and Shankaraiah et al where 76.5% and 77% of the animal bite victims were compliant to the full course of ARV, respectively.^{7,16} However, Patil et al reported in their study that only 34.3% of the cases completed the full course of vaccination, which was low

compared to the present study.¹⁷ This study showed that forgetfulness was the reason for non-compliance in 48.34% cases and fear of loss of wages for 22.51% cases. Shivasakthimani et al in Tamil Nadu reported that forgetfulness was the reason for non-compliance in 35.6% cases and fear of loss of wages for 41.4% cases.² This study showed that most common reason for non-compliance to anti rabies post exposure prophylaxis was forgetfulness followed by fear of loss of wages. Shankaraiah et al reported in their study the main constraints for noncompliance to be forgotten dates, distance from the hospital, cost incurred, loss of wages and interference with school timings/working hours.⁷

Limitation of the study is that the study was conducted only among dog bite patients at a tertiary care center only hence the results of this study cannot be generalized.

CONCLUSION

Most of the participants of dog bite were in the age group of 0-15 years and were male with maximum participants from urban area. Most of the patients were aware about the wound washing as maximum participant washed their wound after dog bite before coming to hospital. Most common reason for non-compliance to anti rabies post exposure prophylaxis was forgetfulness followed by loss of wages. Despite the availability of free PEP at government healthcare facilities the noncompliance to PEP was higher. Hence counselling for completion of prescribed schedule on recommended dates should be done on first dose and on subsequent doses of ARV.

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