

Original Article

Compliance to Intra Dermal Rabies Vaccination Schedule (Updated Thai Red Cross) at the Anti Rabies Clinic, Mandya Institute of Medical Sciences Hospital, Mandya, Karnataka State.Vinay M¹, Mahendra B J²**Abstract****Objectives:** The present study was conducted to

1. Determine the compliance to Intradermal Rabies Vaccination of patients exposed to animal bites who reported to Anti Rabies Clinic of Mandya Institute of Medical Sciences, Mandya
2. Describe the Socio Demographic profile of the bite victims and their relation to patient compliance

Study setting: Anti Rabies Clinic of Mandya Institute of Medical Sciences, Mandya.**Study period:** One year (1st January 2010 to 31st December 2010).**Study subjects:** Animal bite victims reporting to the ARC MIMS, Mandya during the study period.**Type of study:** Descriptive study.**Results:** In the present study a total of 4231 animal bite victims were treated at the ARC, MIMS during the study period. There were 1088 category II and 3143 category III patients. All the category III patients were advised rabies immunoglobulin but only 408 (13.0%) consented. The compliance for the 2nd dose on day 3 was 3413 (80.7%). 2552 (60.3%) of the victims came for the 3rd dose on the 7th day and only 1492 (35.3%) turned up on day 28. Compliance was significantly higher among those having category 3 exposures, those aged less than 15 years, those with college education, those belonging to higher socioeconomic status, those bitten by stray animals and those who had received rabies immunoglobulin. Statistically significant difference was not observed between sexes and among victims from urban & rural areas. The vaccine schedule had to be restarted for 155 (3.7%) victims as they came later than the specified dates, of these, only 23 (14.8%) completed the vaccination schedule.**Key words:** IDRV, Compliance, RIG.**Introduction**

Rabies continues to be a public health problem in India in spite of the availability of the immunobiologicals to prevent the disease. 17.4 million Indians are exposed to the disease every year, and it is estimated that there are 20,000 deaths due to rabies every year in India¹. It is unfortunate that this situation prevails in spite of the availability of the tools to prevent human rabies. Studies have shown that non compliance to treatment on part of the victims who report to the physicians after exposure is an important factor.^{2,3,4} Mandya is a district headquarters in the Karnataka state and the Anti Rabies Clinic (ARC) at the Mandya Institute of Medical Sciences caters to the post exposure prophylaxis needs of a majority of exposed persons in the region. The present study is a report of the continuing effort to determine the compliance to treatment at the ARC and to identify the causes of dropout and minimize the same.

Objectives

The present study was conducted to

1. Determine the compliance to Intradermal Rabies Vaccination of patients exposed to animal bites who reported at Anti Rabies Clinic of Mandya Institute of Medical Sciences, Mandya
2. Describe the Socio Demographic profile of the bite victims and their relation to patient compliance

Methodology

The present study was carried out at the Anti Rabies Clinic of Mandya Institute of Medical Sciences, Mandya. The data on the records at the ARC-MIMS from 1st January to 31st December 2010 were analyzed for the compliance to the IDRV schedule (updated Thai Red Cross). The difference in compliance was then analyzed for different age groups, sexes, place of residence, educational status,

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socio-economic status, categories of exposure and rabies immunoglobulin (RIG) acceptance. The socio-economic status was categorized based on Modified B G Prasad's classification 2010^{5,6}. The data was analyzed with the help of proportions and chi square test.

Results and Discussion

A total of 4231 animal bite victims were treated at the ARC during the study period. The first dose of Intra dermal rabies vaccination was given to the bite victims on the first day of the visit and they were advised to return on days 3, 7 & 28 to complete the immunization schedule.

Table 1
Compliance to IDRV schedule and its association to category of exposure

	Dose 1	Dose 2	Dose 3	Dose 4
No. of Vaccinees	4231	3413 (80.7%)	2552 (60.3%)	1492 (35.3%)
Category II	1088	853 (78.4%)	599 (55.1%)	334 (30.7%)
Category III	3143	2560 (81.5%)	1953 (62.1%)	1157 (36.8%)

It was observed that 3413 (80.7%) of the victims returned for the 2nd dose and the compliance further dropped to 2552 (60.3%) for the 3rd dose and only 1492 (35.3%) received the 4th dose. Among the 1088 category II victims, 853 (78.4%) returned for the 2nd dose, 599 (55.1%) received the 3rd dose and only 334 (30.7%) returned to receive the 4th dose. Of the 3143 category III victims, 2560 (81.5%) returned for the 2nd dose, 1953 (62.1%) received the 3rd dose and only 1157 (36.8%) returned for the 4th dose. The better compliance to treatment among Category III victims was statistically significant (p<0.05).

Table 2
Association of sex & place of residence to compliance to IDRV schedule

	Dose 1	Dose 2	Dose 3	Dose 4
Males	2868	2308 (80.5%)	1716 (59.8%)	1026 (35.8%)
Females	1363	1105 (81.1%)	836 (61.3%)	466 (34.2%)
Rural	2588	2106 (81.4%)	1569 (60.6%)	906 (35.0%)
Urban	1643	1307 (79.5%)	983 (59.8%)	586 (35.7%)

There were 2868 males in the present study, 2308 (80.5%) of them received the 2nd dose, 1716 (59.8%) of them the 3rd dose and only 1026 (35.8%) of them returned for the 4th dose. 1363 female victims were treated. 1105 (81.1%) of them took the 2nd dose, 836 (61.3%) of them took the 3rd dose and only 466 (34.2%) of them took the 4th dose. The difference in compliance among male victims was not statistically significant (p>0.05).

In the present study 2588 of the victims were from rural areas. Their compliance reduced to 2106 (81.4%), 1569 (60.6%) & 906 (35.0%) for the 2nd, 3rd & 4th doses respectively. Of the 1643 victims from urban areas, compliance was reduced to 1307 (79.5%), 983 (59.8%) & 586 (35.7%) for the 2nd, 3rd & 4th doses. The difference in compliance among urban and rural victims was not statistically significant (p>0.05).

Table 3
Association of age & education to compliance to IDRV schedule

Age/Education	Dose 1	Dose 2	Dose 3	Dose 4
<15 yrs	1505	1269 (84.3%)	989 (65.7%)	612 (40.7%)
15-45 yrs	2006	1566 (78.0%)	1128 (56.2%)	629 (31.4%)
>45 yrs	720	579 (80.4%)	435 (60.4%)	250 (34.7%)
Illiterate	1445	1148 (79.4%)	827 (57.2%)	455 (31.5%)
Primary	1169	949 (81.2%)	730 (62.4%)	446 (38.2%)
Secondary	971	778 (80.1%)	572 (58.9%)	330 (34.0%)
College	646	538 (83.3%)	423 (65.5%)	261 (40.4%)

Majority of the bite victims belonged to 15-45 years of age group (47.4%), followed by those under 15 years of age (35.5%) and the rest were above 45 years of age (17%). In the present study 40.7% of those less than 15 years, 31.4% among 15-45 years of age and 34.7% of above 45 years of age completed the vaccination schedule. The compliance was better among those aged less than 15 years and the difference was statistically significant (p<0.05).

Illiterates formed 34.1% of the total population. While the primary, secondary and college going constituted 27.6%, 22.9%, 15.3% respectively. The

compliance was better among those with college education (40.4%) and was the least with illiterates (31.5%), the difference was statistically significant ($p < 0.05$).

Table 4
Association of SES & dog ownership to compliance to IDRV schedule

	Dose 1	Dose 2	Dose 3	Dose 4
Ses I	30	27 (90.0%)	23 (76.7%)	18 (60.0%)
Ses II	288	239 (83.0%)	197 (68.4%)	132 (45.8%)
Ses III	1801	1469 (81.6%)	1136 (63.1%)	659 (36.6%)
Ses IV	1691	1355 (80.1%)	981 (58.0%)	571 (33.8%)
Ses V	421	323 (76.2%)	215 (51.1%)	112 (26.6%)
Pet	1933	1494 (77.3%)	1100 (56.9%)	595 (30.8%)
Stray	2298	1919 (83.5%)	1452 (63.2%)	897 (39.0%)

Most of the study population belonged to SES (Modified B G Prasad Classification) Class III (42.6%) and Class IV (40%), 10.0% belonged to Class V, 6.8% to Class II and I 0.7% to Class. The compliance was directly proportional to the increase in socio-economic status. The highest compliance was among class I (60%) and the least in class V (26.6%), the difference was statistically significant ($p < 0.05$).

Exposures to stray animal (54.3%) were more than pet animal (45.7%). Likewise the compliance was better among those with stray animal exposures (39%) compared to that of pet animals (30.8%). This difference was statistically significant ($p < 0.05$).

Table 5.
Association of RIG administration & restarters to compliance to IDRV schedule

	Dose 1	Dose 2	Dose 3	Dose 4
Taken RIG	408	378 (92.6%)	332 (81.4%)	255 (62.5%)
Not taken RIG	2735	2202 (80.5%)	1638 (59.9%)	913 (33.4%)
Restarted	155	76 (49.0%)	40 (25.8%)	23 (14.8%)

All 3143 category III patients were advised rabies immunoglobulin but only 408 (13.0%) took it. The compliance among those who received RIG (62.5%)

was significantly higher ($p < 0.05$) than those who did not receive it (33.4%).

A total of 155 patients (3.7%) had their vaccination course restarted because of the non-adherence to the advised vaccination dates and only 23 of them (14.8%) completed the full course of vaccination.

Limitations

It was not possible to determine the number of victims who did not turn up for the 4th dose as a result of the biting animal (dog/cat) being alive, which would influence the true drop out from dose 3 to 4th dose

Conclusion

It is evident from the present study that the factors that influence the compliance to treatment include Category of exposure, Age, Education, Socio Economic Status of the victim and the receipt of RIG. There is a need to determine the true dropout rate for the 4th dose.

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