

Original Article

## Use of Rabies Immunoglobulin by Nurses of a Health Unit District in Tamilnadu: A KAP Study

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### Abstract

**Background:** The theme for the World Rabies Day 2016 is 'Educate Vaccinate Eliminate'. Rabies is a disease with 100% mortality which can be prevented if timely measures are taken. The first point of contact for the public are usually the government health care facilities where anti-rabies vaccine and rabies immunoglobulin (RIG) are provided free of cost. **Aim:** To assess the knowledge and practice of administration of RIG among the staff nurses working in primary and secondary level health care centres of a health unit district. **Materials and Methods:** A facility based cross sectional study was carried out among 43 staff nurses working in community health centres and taluk and district level hospitals using a self-administered questionnaire. **Results:** Among the 43 respondents 20.9% had adequate knowledge on categorization of bite wounds 79% on mode of transmission and 60.5% on the dosage of RIG. Around 76.7% were aware of the method of administration of the immunoglobulin. Also 58.1% of them managed category 3 bite in their own health facility and 44.4% referred the patients for management to other centres to avoid untoward incidents, 5.5% referred the patients as they did not know how to administer and 50% of them referred due to unavailability of the immunoglobulin in their facility. **Conclusion:** The training to administer RIG has to be implemented to the nurses in the health centres so as to bridge the existing gaps in the knowledge and practices and also managerial steps are to be taken to ensure uninterrupted supply of the RIG.

**Keywords:** Rabies Immunoglobulin, Nurse, category 3 animal bites

### Introduction

Globally around 59000 deaths per year are estimated to occur due to Rabies and India accounts for 20847 of these mortality.<sup>[1]</sup> Rabies is a zoonotic disease with 100% mortality and timely preventive measures are effective in its prevention. Vaccination of dogs and post exposure prophylaxis following animal bites are the recommended preventive measures.

For animal bites Anti Rabies Vaccine (ARV) and Rabies Immunoglobulin (RIG) are provided free of cost at all levels of government healthcare care centres in Tamil Nadu.

Administration of RIG, ARV and appropriate wound management at the earliest for category-3 animal bites are key for Rabies prevention.<sup>[3]</sup> Hence adequate knowledge about the recommended preventive measures among healthcare providers in management of category-3 animal bites is required. This study was conducted among the health care providers of a health unit district in Tamil Nadu to assess the administration of RIG in category-3 animal bites.

### Materials and Methods

This facility based cross sectional study was carried out among the government employed nurses in a health district of Tamil Nadu state. All the nurses working in the 21 health facilities which included the community health centres, taluk level hospitals and district level hospitals run by the government were

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selected for the study. After getting institutional ethics committee approval from a government medical college in Chennai, Tamil Nadu a self administered questionnaire was distributed to 43 nurses. The questionnaire assessed the knowledge of the nurses regarding the animal bite categories, modes of rabies transmission, the dosage of RIG and the method of its administration. The category-3 animal bite management practiced by the nurses were also assessed.

### Statistical analysis

The data was analysed using SPSS 16 version. Chi-square test was applied to find the significance of association between knowledge about RIG usage and referral of animal bite patients. A p value of <0.05 was considered as statistically significant.

### Results

Among the studied health centres in the health unit district at TN state, 65% of the CHC and 35% of the sub-taluk and taluk head-quarter hospitals were found to be equipped with RIG. The distribution of the proportion of nurses which adequate knowledge of dosage and method of RIG administration and the actual practice for category-3 animal bites is pre-

sented in table 1. Seventeen (39.5%) of the nurses referred category-3 animal bite patients to other centres. Fifty percent of the nurses had referred the patients as their institutes did not have RIG, 44.4% due to not having confidence in managing category-3 animal bites and administering RIG and 5.6% due to lack of knowledge of administration of RIG. It was found that referral of animal bite cases to other health centres was significantly lower in the nurses having adequate knowledge of animal bite management compared with those who had poor knowledge ( $p < 0.05$ ) (table 2).

### Discussion

The current study was undertaken to assess the knowledge and practice of rabies immunoglobulin among the staff nurses and primary and secondary level health centres. Staff nurses who are available 24x7 in all health centres are the first point of contact for the general public and hence play a crucial role in rabies prevention. WHO and Government of India have formulated clear cut guidelines for category I, II and III management. In this study, 20.93% had correct knowledge on categorisation of bite wound. In a study conducted by Ranadip Chowdhey and others among the interns of a Government medical college in Kol-

**Table 1.** Knowledge acquired about rabies and management of animal bites by nurses in a health unit district, TN

Variable	Correct response
Categorisation of animal bites	20.9%
Modes of rabies transmission	79.1%
Dosage of RIG	60.5%
Method of RIG administration	76.7%
Management of Category animal III bite	58.1%

**Table 2.** Association between the knowledge of RIG administration and referral

Referral	Not referred	Referred	Total
<b>Knowledge</b>			
Good →	16	5	21
Bad ↓	10	12	22
Total	26	17	43

\*(The chi-square statistic is 4.246 and p value is 0.039)

kata, 43.8% and 27.5% had correct knowledge on categorisation of single transdermal bite and licks on broken skin as category III respectively. In the present study among staff nurses 79.07% were aware of the fact that other animal / bat bites could cause rabies when compared with a study conducted in Northern India among MBBS doctor's and AYUSH practitioners by Prasanna Muthara and co-authors. 100% of the MBBS doctor's and 60% of AYUSH doctors knew the correct mode of transmission. In a study among the paramedical students by Jhanani and others, 73% of the paramedical students knew the correct mode of transmission. In our study 60.47% staff nurse had correct knowledge on the dosage of RIG and 76.74% were aware of the correct method of its administration.

In the study conducted in Kolkata, interns correct knowledge regarding the dosage of RIG was observed in 15% of the respondents and only 22.5% of the interns were aware of the correct method of its administration. In the study by Prasanna Muthara et al 11.11% of the MBBS Doctors and none of the AYUSH doctors were aware of the correct dosage of RIG. This is in contrast to our study where the staff nurses are having better knowledge RIG dosage and administration when compared to the interns, MBBS doctors and AYUSH practitioners of Northern India.

The observed difference is due to the fact that RIG is available free of cost at all levels of Govt. Health Care facilities in Tamil Nadu. Hence based on the principle of "learning by doing" method staff nurses in Tamil Nadu have better knowledge. In our study 58.14% managed category III bite in their own health facility. Among the reasons for referral 44.4% referred as they did not have the confidence in managing category III bite and administration of RIG 5.56% referred due to lack of knowledge on RIG 50% referred owing to the unavailability of RIG in their health facility. The theme for World Rabies Day 2016 is 'Rabies: Educate, Vaccinate, Eliminate' which emphasises the two crucial actions that communication can do to prevent rabies. It also reflects the global target to eliminate all human deaths from dog-mediated rabies by 2030.

## Conclusion

WHO has formulated guidelines for treatment of category I, II, III bite management which should be adhered strictly. The uniform guidelines ensure appropriate wound management and treatment of category III bite which help in prevention of rabies and also cut down the cost of ERIG by the Government if the bite victims are correctly categorised and treated, thus preventing the complications due to unwanted and overenthusiastic RIG administration.

This study concludes that there is significant gap about administration of RIG among the government nurses in health centres in TN state. It is recommended for periodic training and reorientation on post-exposure measures for rabies prevention for the staff nurses and uninterrupted supply of RIG at health care facilities is required.

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