Original Article:

SENSITIVITY PATTERN OF EQUINE RABIES IMMUNOGLOBULIN (ERIG) AMONG PATIENTS ATTENDING THE ARV CLINIC IN A TERTIARY CARE HOSPITAL IN DEHRADUN

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ABSTRACT

Objective:

1. To study the sensitivity pattern of Equine Rabies Immunoglobulin (ERIG) among patients attending the ARV clinic.
2. To study the demographic profile of patients

Study Design: Record based Cross-sectional study.

Study setting: The study was conducted at ARV Centre of Govt. Doon District Hospital, Dehardun (Uttarakhand)

Statistical Analysis: Data was analysed using Epi info 3.5.3.

Results: A total of 2760 patients were studied out of which 76.1% were males and 23.9% were females. Almost same pattern of sex distribution were found in rural, urban and semi-urban areas. Only 24.1% followed standard wound cleaning, mainly cleaning thoroughly with soap and water. 74.2% cases belonged to Category –III type of wounds with maximum dog bites. 82.9% cases approached the Hospital for wound management in less than 24 hours. 93.7% cases showed no sensitivity to ERIG and only 31 cases were sensitive to ERIG. Maximum (71.5%) were takers of ERIG than HRIG due to it cost effectiveness

Key words: Demographic variables, exposure type, co-morbidities, ERIG sensitivity, treatment.

INTRODUCTION

Amongst all human infections, Rabies is the tenth most common cause of death[1]. Human Rabies is endemic in India and annually an estimated 20,000 persons die of this disease. According to WHO-APCRI National Multi-centric Rabies Survey (2004), there are estimated 17.4 million animal bite cases and 20,000 deaths due to human Rabies in India[2]. This corresponds to about 36% of the total global deaths due to human rabies.

Following exposure to rabid animal, proper wound care, vaccination with modern anti rabies vaccine and administration of rabies Immunoglobulin can prevent rabies and thereby save many lives. The patient should be provided with proper post exposure prophylaxis failing which the patient may succumb to Rabies. But it has been observed that the patient as well as physicians both give little importance to Rabies Immunoglobulin administration[2].

Rabies immunoglobulins (RIGs) are life saving in severe or category-III exposure to Rabies[3]. In an individual not previously immunized against Rabies there are at least ten critical days after starting Rabies vaccine before blood and tissue rabies neutralizing antibodies - RVNA levels are sufficient to inactivate any residual virus in the wound, it is to cover that window period of vulnerability that injection of RIGs into the wound is important.

In this background, the current study was undertaken to study the sensitivity of ERIG

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MATERIALS AND METHODS:

Study setting: The study was conducted at ARV Centre of Govt. Doon District (Tertiary care level) Hospital of Dehradun.

Study Period: The study was carried out from December 2016 to April 2017

Study design: This is a Record based cross-sectional study.

Method of Study: Details were collected from the ARV register regarding the demographic variables, type of exposure, history of other co-morbidities, sensitivity to Equine Immunoglobulin, treatment taken.

Statistical Analysis: A total of 2760 patients were studied and their data coded and entered in MS Excel and analysed using Epi info 3.5.3.

RESULTS AND DISCUSSION:

Table - I
Distribution of People according To Residential area

Area	MALE No (%)	FEMALE No (%)	TOTAL No (%)
Rural	576 (78.4)	158 (21.6)	734 (100.0)
Urban	374 (73.3)	136 (26.7)	510 (100.0)
Semi-Urban	1153 (75.7)	370 (24.3)	1523 (100.0)
TOTAL	**2103 (76.2)**	**657 (23.8)**	**2760 (100.0)**

Out of total 2760 patients, 2103 (76.2%) were males and 657 (23.8%) were females. Almost same pattern of sex distribution were found in rural, urban and semi-urban areas. Maximum population of animal bite cases came from semi-urban areas, followed by rural and then from urban areas.

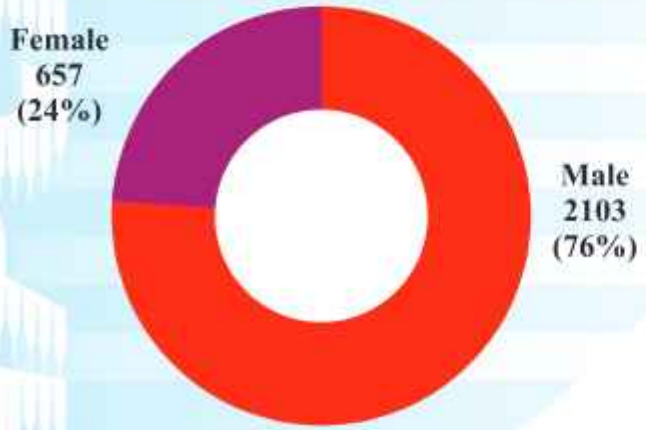

Fig. 1 : Gender-wise distribution (n=2760)

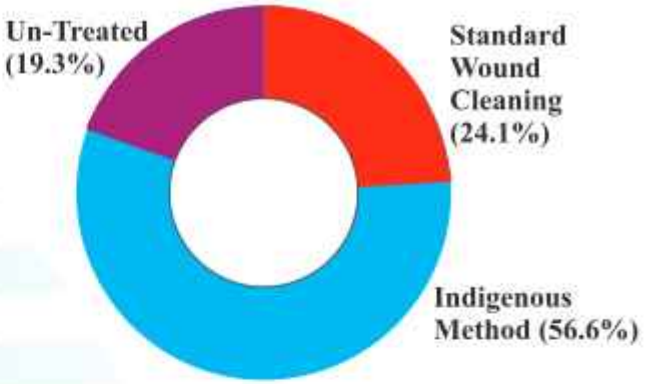

Fig. 2 : Initial treatment approach of Animal bite cases (n=2760)

Regarding Initial Treatment Approach, only 24.1% followed standard wound cleaning, mainly cleaning thoroughly with soap and water. Whereas, 19.3% patients kept the wound un-treated and maximum (56.6%) cases used indigenous methods which mainly included putting turmeric, red chillies, tying with plastic sheet etc.

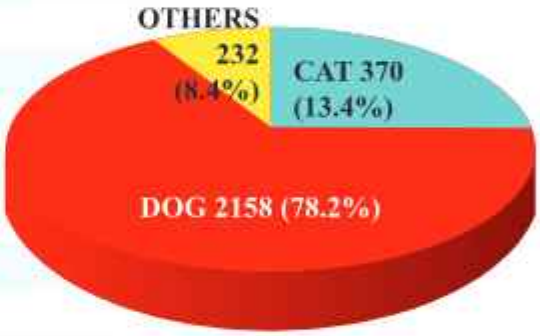

Fig. 3 : Type of Animal Bites (n=2760)

Animal bitten cases were found mostly (78.2%) from dog followed by cat (13.4%) and about 8.4% cases from other animals, mainly Monkey

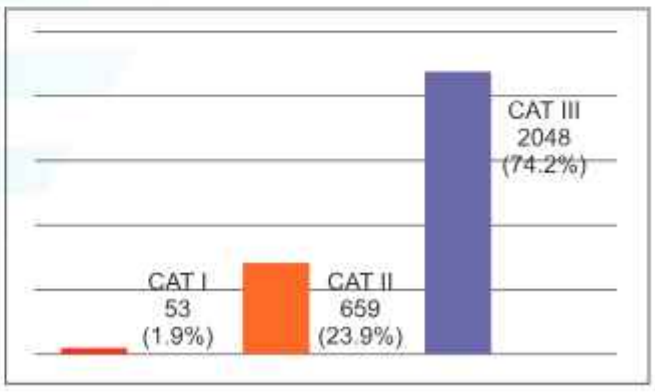

Fig. 4 : Category of Wound (n=2760)

Maximum (74.2%) cases who approached ARV clinic of Doon Hospital for animal bite management, belonged to Category –III type of wounds followed by (23.9%) Category-II cases and few (1.9%) of Category-I.

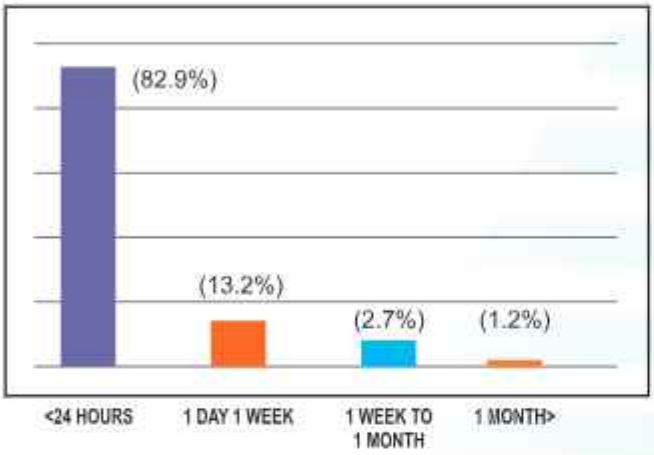

Fig. 5 : Delay initiation of ARV/RIG (n=2760)

In 82.9% cases, there was delay of less than 24 hours in approaching Hospital for wound management. Whereas, in 13.2% cases approached after 24 hours to one week. 2.7% patients, who mainly comprised of rural areas, reached the hospital till one month. Few cases (1.2%) came after more than one month.

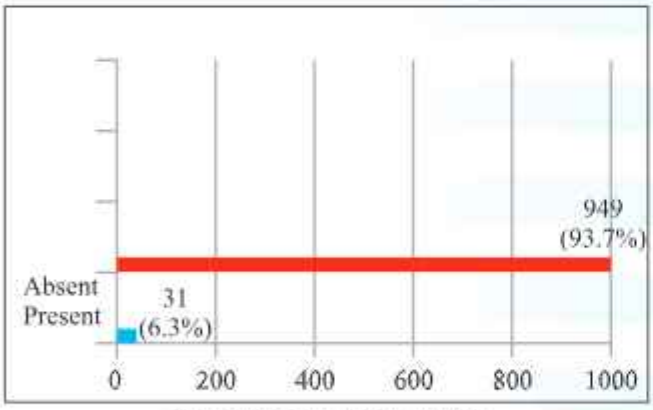

Fig. 6 : ERIG Sensitivity (n=980)

In maximum (93.7%) cases no sensitivity to ERIG was found and only 31 cases were sensitive to ERIG. Sensitivity test was not done in 283 cases.

There were very few takers (6.1%) of HRIG due to mainly, affordability. No sensitivity to ERIG found in maximum (53.7%) cases. Whereas only 1.8% i.e. in 31 cases sensitivity was found. HRIG

Table - 2
SENSITIVITY STATUS OF RABIES IMMUNOGLOBIN

TEST SENSTIVITY	Ig TAKEN	NUMBER (%)
NEGETIVE	ERIG	949 (53.7)
NEGETIVE	HRIG	65 (3.7%)
POSITIVE	ERIG	31 (1.8%)
POSITIVE	HRIG	44 (2.4%)
NOT DONE	ERIG	676 (38.4%)
	TOTAL RIG TAKERS	**1765 (100%)**

*283 CAT-III cases were advised RIG, but patient/ relatives refused

was found more sensitive (2.4%) as compared to ERIG.

Sensitivity test was not done in 676 cases, that is, 38.4% of all RIG compliant cases.

Very few (in 2-3%) Post ERIG adverse effects were found, which were mainly Urticaria, local Pruritis and low grade fever. No case of Anaphylaxis was encountered.

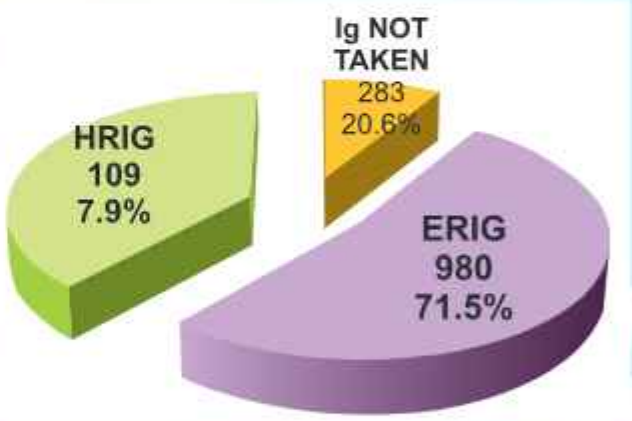

Fig. 6 :Approach to RIG (n=1372)

However, in cases with positive skin test, the ERIG was administered due to non affordability of HRIG by the cases.[4]

On the whole, maximum RIG takers were ERIG (71.5%) due to cost effective. Only 109 cases (7.9%) took HRIG who belonged to urban areas with High Income group.

20.6% cases did not take Immunoglobin as they refused to buy from outside due to unavailability in the hospital. They were given local wound care and ARV.

CONCLUSION

Our study indicated that, now-a-days the sensitive reactions to ERIG have come down to great extent. The fact is that in a country like India, very few people can afford to buy HRIG, so ERIG is the only life saving RIG even though in Positive skin test to ERIG. The state Government should make adequate budget for providing Immunoglobin in Government Health set-ups, at least in District Hospitals and CHCs.

Another point to be highlighted is that majority of people still believe in indigenous methods or either home remedies for treating animal bite wounds and still others will do nothing and will keep it untreated. So a thorough workout is needed to organize awareness programme regarding management of animal bites in rural and urban areas. But, the study also revealed that in case of animal bite, majority of people have become aware to approach health centre within 24 hours. It was also found that people also had knowledge of initial wound management due to animal bite by thoroughly washing the wound with soap and water.

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ANNOUNCEMENT

The APCRI Newsletter is published every six monthly, in October and in April. APCRI members and the members of the Scientific Community are requested to contribute News Clippings, Photographs and Reports on Scientific activity on Rabies and Related matter for publishing in the Newsletter.

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