

## A Hospital Based Study to Know The Adverse Effects After Administration of Antirabies Serum in Animal Bite Victims Attended Anti Rabies Clinic



### Medical Science

**KEYWORDS :** Category III animal bite, Equine anti-rabies serum, adverse effects, Rabies.

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### ABSTRACT

*Background: Rabies is a highly fatal disease of CNS caused by the rabies virus and is transmitted predominantly by the saliva of infected domestic or wild animal[1, 2, 3]. Rabies remains an important public health issue worldwide due to the prevalence of endemic animal rabies specially in the developing countries[3]. Objectives: The present study was undertaken to know the adverse effects following administration of equine anti rabies serum in category III adult animal bite victims. Materials and methods: This is a hospital based study conducted among the category III animal bite victims who had attended Anti Rabies Clinic at M. G. Hospital, Jodhpur from 1st January 2013 to 31st January 2013. Results: In our study of 12 months period, 6125 patients attended the clinic, out of which 25 patients were Category I, 1923 were category II and 4177 patients were category III animal bite victims. We have selected only 1750 adult patients for our study. Out of this 1437 were adult males and 313 were adult females. Out of 1750 category III adult animal bite study subjects, 2.91% (51) reported some type of adverse effect. Out of those 0.34% (6) complained of nausea + vomiting + vertigo and they were managed conservatively. 0.45% (8) patients complained of Swelling + fever, 0.57% (10) complained of pain + Swelling, 0.40% (7) complained of erythema + rash, 0.45% (8) patients complained of pain + swelling + rash, 0.22% (4) patients complained generalized pruritus + urticarial rash, 0.11% (2) complained of arthritis and only 0.05% (1) patient complained of generalized lymphadenopathy.*

### Introduction:

Rabies immune globulin is an essential component of rabies post exposure treatment[1, 2, 3, & 4]. Equine anti-rabies serum and human rabies immune globulin are available for the passive immunization of animal bite victims along with the active immunization with modern tissue culture rabies vaccine[3]. Human rabies immune globulin is always in short supply and because of the economic constraints Equine anti-rabies serum is commonly used for the post exposure management of category III animal bite victims[5].

### Study setting:

This is a hospital based retrospective study conducted in category III adult animal bite victims in Anti Rabies Clinic at M. G. Hospital, Jodhpur.

### Study period:

The study was conducted from January 1, 2013 to December 31, 2013.

### Materials and Methods:

Complete details of adult category III animal bite patients along with history of prior administration of anti-rabies serum were recorded. Patients who were sensitive to Equine anti-rabies serum, pregnant women, immunocompromised patients and patients aging less than 15 were excluded from the study. The anti-rabies serum was administered @ 40 IU/ Kg body weight[1, 2, 3, 4 & 5]. Maximum possible amount was infiltrated locally and the remaining amount was injected deep intra muscularly in the gluteal region. Composition of anti-rabies serum used during our study was as follow: Each 5ml vial contained: Equine anti-rabies immunoglobulin fragments-not less than 300 I.U./ml; Water for Injection I.P.- q.s.; Preservative : Cresol I.P.-NMT 0.25% v/v; Stabilizer : Glycine I.P., Excipient : Sodium Chloride I.P. The equine anti-rabies serum is available as free Govt. supply in ARV clinic and is stored at 2-8°C in freeze and before administering in to the patients it is allowed to come to the room temperature. After administration of anti-rabies serum the patients were observed for 30 minutes for any adverse effects. After that the patients were asked to report any adverse complaints and all the details of those complains were recorded. The patients were followed up for one month. Patients with complaints were managed accordingly. All adverse reactions were recorded immedi-

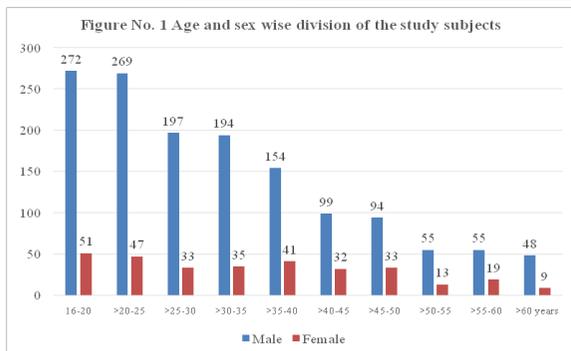
ately and when the patients returned for wound care, injection of vaccine, or other treatment. Analysis of the data was done using Microsoft office 2013 and SPSS software. No casualty were reported.

### Results:

In our study of 12 months period, 6125 patients attended the clinic, out of which 25 patients were Category I, 1923 were category II and 4177 patients were category III animal bite victims. We have selected only 1750 adult patients for our study. Out of this 1437 were adult males and 313 were adult female. Out of 1750 category III adult animal bite study subjects, 2.91% (51) reported some type of adverse effect. Out of those 0.34% (6) complained of nausea + vomiting + vertigo and they were managed conservatively. 0.45% (8) patients complained of Swelling + fever, 0.57% (10) complained of pain + Swelling, 0.40% (7) complained of erythema + rash, 0.45% (8) patients complained of pain + swelling + rash, 0.22% (4) patients complained generalized pruritus + urticarial rash, 0.11% (2) complained of arthritis and only 0.05% (1) patient complained of generalized lymphadenopathy.

**Table No. 1**  
Age and sex wise division of study subjects

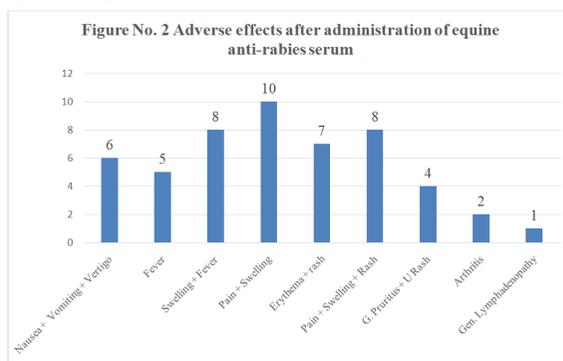
Age Group	Male	Female	Total	%
16-20	272	51	323	18.4571429
>20-25	269	47	316	18.0571429
>25-30	197	33	230	13.1428571
>30-35	194	35	229	13.0857143
>35-40	154	41	195	11.1428571
>40-45	99	32	131	7.48571429
>45-50	94	33	127	7.25714286
>50-55	55	13	68	3.88571429
>55-60	55	19	74	4.22857143
>60	48	9	57	3.25714286
	1437	313	1750	100



**Table No. 2**  
Adverse effects after administration of equine anti-rabies serum

S. No.	Adverse effect	No of patients	%
1	Nausea + Vomiting + Vertigo	6	0.34286
2	Fever	5	0.28571
3	Swelling + Fever	8	0.45714
4	Pain + Swelling	10	0.57143
5	Erythema + rash	7	0.4
6	Pain + Swelling + Rash	8	0.45714
7	G. Pruritus + U Rash	4	0.22857
8	Arthritis	2	0.11429
9	Generalised Lymphadenopathy	1	0.05714
		51	2.91429

**Discussion:**



In the past when less purified equine anti rabies serum was being used, the incidence of the adverse[3] effect was 15-45% of the recipients but because of the more refined preparations of the presently available equine anti-rabies serum we have observed adverse effects in only 2.91% of the recipients of the ARS. Slightly lower incidence of the adverse effects (1.6%) of equine anti-rabies serum was observed by H Wilde[7]. This may be due to the fact that there are lower incidence of adverse effects in patients aging less than 15 years and H. Wilde in their study has included patients aging less than 15 years also whereas we have not included. Higher incidence[8] of adverse effect like induration (67.1%), pain (53.8%), and pruritus (29.2%) was observed in a study done at MKCG Medical College, Berhampur, Odisha in 2007. This may be due to the involvement of particular anatomical sites for the study.

**Conclusion:**

Data shows that Equine Anti Rabies Serum has not caused any life threatening adverse effect in > 15 years (non-sensitive and immune competent) adults and non-pregnant women.

**REFERENCE**

1. Park' text book of preventive and social medicine- 2011, 250-257, Publisher Banarasidas Bhanot, 1167, Prem Nagar, Nagpur Road, Jabalpur, M. P, India. | 2. Text book of community Medicine by Sunder Lal, Adrash and Pankaj- 2011, 497-505, CBS Publishers and Distributors Ltd, New Delhi, India. | 3. WHO Technical Report Series No. 709, 1984 (WHO Expert Committee on Rabies: seventh report). | 4. Association for Prevention and Control of Rabies in India (APCRI), assessing the burden of rabies in India: WHO sponsored National Multi Centric rabies Survey, 2004. | 5. Sudarshan MK, Ashwath Narayana DH. A Clinical Evaluation of Usage of Rabies Immunoglobulins, APCRI Journal. 2012; 9:33-4. | 6. Manual on rabies Immunoglobulin (RIG) administration. Association for Prevention and Control of Rabies in India (APCRI), First edition, 2009. | 7. H Wilde, P Chomchey, P Punyartabandhu, P Phanupak & S Chutivongse, "Purified equine rabies immune globulin: a safe and affordable alternative to human rabies immune globulin", WHO Bulletin OMS Vol 67, 1989. | 8. Tapas Ranjan Behera, Durga Madhab Satapathy, Ashwini Kumar Pratap, Department of Community Medicine, MKCG Medical College, Berhampur, Odisha 760004, India "Safety of equine rabies immunoglobulin injection into fingers and toes" Asian Biomedicine Vol. 6 No. 3 June 2012; 429 - 432. |