

Original article

Compliance to IDRV at the Anti Rabies Clinic in a tertiary Care Hospital in Northern Kerala

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Abstract

- Objectives**
- To study the pattern of all bite victims who were initiated on IDRV in the months of July and August 2009, using IDRV register in the Anti Rabies Clinic in Calicut Medical College.
 - To study the compliance to IDRV.
 - To assess the factors influencing the drop outs.

Materials and Methods:

A prospective study was conducted over a period of 2 months using IDRV register and interviewing the patients, in the Anti Rabies Clinic in Calicut Medical College. All bite victims who discontinued the vaccination and could be traced were included in the study.

Results:

502 cases newly started on IDRV during the period of two months were followed up. The overall dropout rate was 24.5%. 32.5% discontinued after first dose; 20.3% after second dose and 57.7% after the third dose. The most common cause for default was the animal remaining healthy at the end of 10 days observation (68.8%). Other reasons included being out of station, personal reasons, ignorance, did not remember, perceived side effects, other illness at the time for next dose, etc.

Introduction

As per WHO APCRI National Multi-centric Indian Rabies Survey, India accounts for 36% of the global burden. The annual bite incidence rate is 17.4 per 1000 population. The annual man days lost due to animal bites is 38 million. Majority (60%) resorted to indigenous treatment and died (65%) without hospitalization and only 47.9% received vaccination.²

Though virtually 100% fatal it is largely preventable if timely and proper post exposure measures are taken which includes **local treatment of wound, active immunization with vaccines and passive immunization with rabies immunoglobulin**¹.

Ever since the nervous tissue vaccines were banned, the cell culture vaccines administered intramuscularly have become the mainstay in prevention of rabies. High cost of intramuscular administration of CCV is a limiting factor for its wider use.³ The cost effectiveness of Intra dermal Rabies Vaccination has been accepted and IDRV has been the practice in

many countries like Sri Lanka, Thailand, Philippines.³ Intra Dermal Regimen reduces the cost of vaccination by about 70-80% when compared to Intra Muscular Regimen and this clearly makes an attractive option for resource-starved countries like ours.⁴ This has made antirabies vaccination available and affordable to large numbers even in developing countries.

In India, the Drug Controller General of India has approved IDRV in June 2006 and has been implemented successfully in states of UP, AP, Orissa, West Bengal, Karnataka, Maharashtra, Tamil Nadu, Himachal Pradesh and Kerala. **IDRV was initiated in Kerala in 2009** and in the Anti Rabies Clinic, Calicut Medical College in March 2009.

When the vaccine is administered intradermally, the antigenic load is reduced; hence it is important that the bite victim completes the recommended schedule. **Hence drop outs are of grave concern, from the perspective of maintaining a protective antibody titre for a longer time period.**

Compliance to IDRV at Anti Rabies Clinic in a tertiary care hospital in northern Kerala
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Objectives

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- To study the compliance to IDRV.
- To assess the factors influencing the drop outs

Materials and Methods

Study Design- Prospective Study using the IDRV registers and interview technique.

Study Setting- Anti Rabies Clinic, Dept. of Community Medicine, Calicut Medical College.

Study Period- July 1st to October 15th 2009.

Study Subjects- Bite victims who were started on IDRV in the months of July and August. As a protocol in all Medical Colleges throughout Kerala, all the bite victims are advised to complete all four doses of IDRV. So any person who has discontinued at any point of time is taken as a defaulter.

Method- A Prospective study was conducted following up all bite victims who were initiated on IDRV in the months of July and August 2009, using IDRV register in the Anti Rabies Clinic in Calicut Medical College. All bite victims who discontinued the vaccination and could be traced were interviewed to find the reason for discontinuing during the first week of October, 2009.

Analysis- using SPSS software.

Results & Discussion

A total of 502 new cases were registered for IDRV from July 1st 2009 to August 31st 2009, in the Anti Rabies Clinic of Calicut Medical College. Of these 502 new cases, 54% (268) were males. Majority (47.9%) of the animal bite victims were in the age group of 15-45yrs.

Around 54.8% gave history of dog bite, while 188(37.5%) gave history of exposure to cats, 7(1.4%) to bandicoots, 7(1.4%) to mongoose, 6(1.2%) to foxes, 6(1.2%) to rabid cows, etc. Of these, 66.1% (332) were exposure to domestic observable animals. 450 out of these 502 bite victims (89.7%) gave history of animal being alive at time of reporting to the clinic.

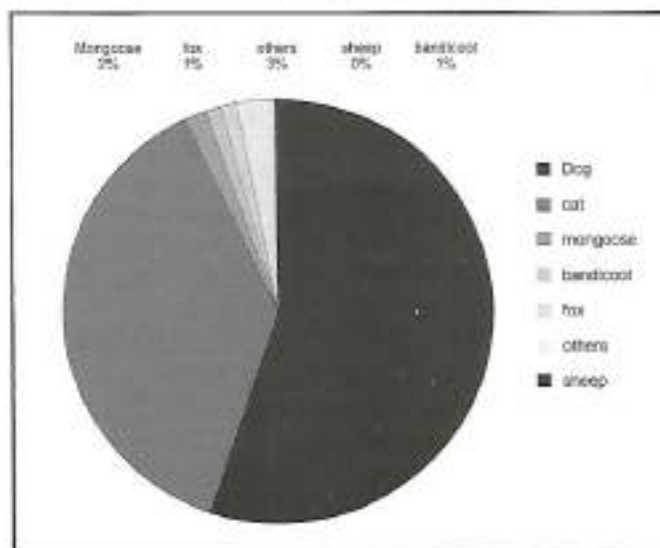


Table I
Distribution according to site of bite (n=502)

Site	Number	%
Head and neck	31	6.2%
Trunk	15	3%
Upper Limb	166	33.3%
Lower Limb	268	53.4%
Multiple sites	4	0.8%

Of these 502 animal bite victims, 294 (58.5%) had Category II exposure while 199 (40%) had Category III exposure. Majority of the victims had lower limb exposure (53.4%), while 33.3% gave history of upper limb exposure and only 6.2% had exposure in the head and neck region.

Majority (48.6%) reported on the same day of exposure while another 29.5% reported on the next day. Only 3% of the bite victims reported after one week.

91.4% (459) of the victims had performed wound toilet after the exposure.

Rabies immunoglobulin (ERIG/HRIG) was administered to around 48.74% (97 out of the 199 category III victims) in our study.

379 out of 502 completed the post exposure prophylaxis regimen. The compliance rate (75.49%) was good, when compared to compliance in a similar study conducted in MIMS, Mandya, where it was found to be only 38.5%. This may be due to the fact that the vaccination is provided free of cost to all in our clinic and moreover the people may be more

aware of rabies. **123 (24.5%) of the animal bite victims started on IDRV dropped out at various times. 40 (32.5%)** dropped out after the first dose, while another 25 (20.3%) dropped out after the second dose and majority dropped out after the third dose -**71(57.7%)**. A similar pattern was noted in the study at MIMS, Mandya.



Fig. 2 : Sex distribution of defaulters

Characteristics of the defaulters:

Of the 123 defaulters, 54.5% were in the age group 15-45yrs and 8.1% were below 5yrs of age. Majority of the defaulters were males (63.4%). This may be explained by the fact that most of them were in their productive age (15-45yrs), so probably could not spare time from work place to come to the clinic.

68.3% of defaulters had given history of exposure to domestic animal bite.

68 (55.3%) of the defaulters had category II exposure and 55 (44.7%) had category III exposure. Probably the category of wound has not much of a role to play in our scenario where as in the study done at Mandya about 90% had category III exposure.

27 out of these 55 drop outs were given Rabies Ig (ERIG/HRIG).

Reasons for Default

Efforts to contact or trace all the drop outs were made using the personal details provided in the IDRV register of the Anti Rabies Clinic and to find the reason for not completing the schedule as recommended. 77(62.6%) could be traced and contacted. The most common reason for drop out

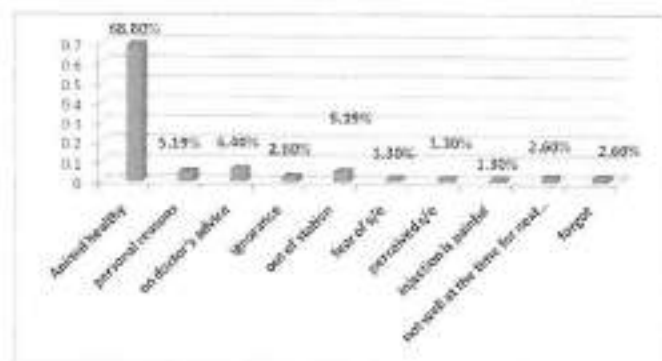


Table II
Risk Factors Influencing Default

Risk Factor	chi square Value	Df	Pvalue	Odds ratio	C.I
Age group <15yrs vs >15yrs	3.136	1	0.077	0.638	0.387-1.062
Sex* Male vs female	6.056	1	0.014	1.688	1.110-2.566
Domestic/stray animal	0.403	1	0.526	1.151	0.745-1.778
Site of bite	1.172	3	0.76		
Category of exposure Category II vs III	1.753	1	0.185	0.758	0.502-1.143

was animal being alive and healthy (68.8%) at the end of 10 days of observation. Other reasons being personal reasons, on doctor's advice, ignorance, being out of station, fear of side effects or perceived side effects, could not tolerate the pain, forgot, not well at the time of next dose, etc.

The most common reason for drop out was animal being alive and healthy, which were either dogs or cats. This shows the level of awareness among the common man. This finding also correlates with the fact that majority of defaulters had given history of exposure to domestic animal bite.

Conclusion

The overall compliance rate (75.49%) was good, the dropout rate was only 24.5%. Majority of the defaulters were males. Majority of the defaulters dropped out on the fourth dose, as the animal was alive and healthy.

With the introduction of IDRV, completing the vaccination schedule cost effectively has become a reality. Hence attempts have to be made to improve the compliance rate, so that the vaccinees remain protected from rabies for a longer period. And thus we can achieve our dream of Rabies Free Kerala by

2015 by increasing the awareness especially among men regarding the importance of completing the regimen.

Together we can make a difference in Rabies Prevention [motto of WORLD RABIES week 2009].

Reference

1. B R Harish, B J Mahendra, M Vinay, A Study of factors influencing

compliance to IDRV at Anti Rabies Clinic of Mandya Institute of Medical Sciences, Mandya. APCRI Journal July 2009; Vol. XI; issue 1

2. Association for Prevention and Control of Rabies in India, Assessing the burden of rabies in India; WHO sponsored national multicentric rabies survey
3. Operational guidelines for rabies prophylaxis and Intradermal Rabies Vaccination in Kerala, 2009
4. Evaluating the reduction in direct costs incurred with intradermal administration of cell culture rabies vaccine in comparison to intramuscular schedule in a tertiary hospital of north Kerala. Calicut Medical Journal 2009; 7(2): e5

ASSOCIATION FOR PREVENTION & CONTROL OF RABIES IN INDIA (APCRI)

Association for Prevention & Control of Rabies in India (APCRI) was founded on 17th April, 1998 & is registered as a scientific society under the Karnataka Societies Act S-No 439, 2000-01. It is an association of professionals, scientists & others who are committed to the elimination of rabies from India.

Goal: Rabies Free India by 2020.

Activities till date

1. **Annual Conferences on 6th July (World Zoonosis Day) or near about (On Saturday and Sunday only):**
Kolkata (1999), Bangalore (2000), Amritsar (2001), Jaipur (2002), Bhubaneswar (2003), Kolkata (2004), Shimla (2005), Jammu (2006), Hyderabad (2007), Lucknow (2008), Thiruvananthapuram (2009) and New Delhi (2010).
2. **Workshops, Seminars & Training Programmes:**
 - National workshop for APCRI trainers in modern WHO approved rabies prophylaxis at NIMHANS, Bangalore (2001).
 - National seminar on "Intradermal Rabies Vaccination", KIMS, Bangalore (2003).
 - National workshop on "Developing guidelines for Rabies Prophylaxis" at Hyderabad (2006).
 - National workshop on "Rabies Prophylaxis" at Alleppey, Kerala (2006).
 - National workshop on "Rabies Immunoglobulin (RIG) Administration" at KIMS, Bangalore (2008).
 - **National Seminar on Rabies Vaccines: Important Issues, at Visakhapatnam (Vizag), Andhra Pradesh (1st March, 2009).**
 - **National Workshop on Development of IEC Material on Prevention of Rabies for School Children and Public at Mysore, Karnataka (20th & 21st March, 2010).**
3. **Publications:** APCRI Journal (Biannual) & APCRI News Letter (Biannual).
4. **WHO sponsored "National multicentric Indian rabies survey" (2004).**
5. **Award:** APCRI was honoured with "**Chiron vaccines award 2000**" for its contribution to prevention & control of Rabies in India.
6. APCRI in association with Indian Academy of Paediatrics (IAP) and Rabies in Asia (RIA) Foundation, formulated the **IAP Guidelines for Rabies Prophylaxis in Children (2008)**
7. **Slides on "Rabies Prophylaxis Current concepts & Recommendations"** prepared by an expert consultation (2001), Revised in 2006 & now available on www.apcri.org
8. Observed "**World Rabies Day**" in 8th September, 2007, 28th September 2008 and 28th September, 2009 and 28th September, 2010 all over the country.
9. WHO-APCRI survey on "**Post Exposure Prophylaxis modalities in India (2007).**
10. APCRI is regularly organizing Zonal/ Regional conferences & CME programmes.
11. APCRI played a major role in implementation of **Intradermal Rabies Vaccination (IDRV)** in the country.
12. **Manual on Rabies Immunoglobulin (RIG) Administration published in February, 2009.**