Original Article:

PROFILE OF RE-EXPOSURE ANIMAL BITE CASES AT ANTI RABIES CLINIC OF MKCG MEDICAL COLLEGE, BERHAMPUR, ODISHA

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ABSTRACT

Objectives:

1. To study the socio-demographic profile of re-exposure cases.
2. To know the time interval of previous exposure & treatment.
3. To study the nature of exposure & type of animal bites.

Study Setting:

Anti-Rabies Clinic of MKCG Medical College, Berhampur, Odisha.

Study period: 1st January to 31st December 2014

Study Subjects: All re-exposure cases who reported to the ARC of MKCG Medical College, Berhampur during the study period were included in the study.

Exclusion criteria: Re-exposure cases who had not completed the previous post-exposure treatment were excluded from the study.

Methodology: Patients suffering from Animal Bites and had previously received the full course of Anti-rabies Vaccination with or without RIG or have received pre-exposure prophylaxis against rabies.

Results: During the study period a total of 5387patients reported to the ARC for anti rabies treatment among whom 774 (14.36%) were re-exposure cases but 604 (11.21%) patients were included as our study subjects adhering to the inclusion criteria. All the Re-exposure cases had Category III exposures. Majority (61.3%) of re-exposure cases were Males; children <14yrs accounted for 38%; Dog bite in re-exposure cases accounted for 90.9% cases. Interestingly 4.5% cases had been exposed to the same pet dog. Analysis of previous treatment revealed that majority (93.19%) were treated for Category-III animal bite & only 2.27% for Category-II. Only 4.54% had received pre-exposure prophylaxis. Majority of the re-exposure cases reported to the ARC within first 24hrs and 83% had practised some form of washing of wounds.

The 4.54% cases who received pre-exposure prophylaxis had taken TCV (PVRV-Inj.Verorab) by I.M. route but rest of the re-exposure cases had received the TCV (PVRV-Inj. Abhayarab) by Intra Dermal route (Updated TRC regimen). Majority (88.63%) of the cases had completed the booster doses of Day 0 & 3. However antibody titre of the re-exposure cases could not be done.

Key Words : Rabies, Post exposure Prophylaxis, Re exposure, Compliance to IDRV.

INTRODUCTION

Rabies is a 100% vaccine-preventable disease. Global, estimates indicate that human mortality (due to endemic canine-mediated rabies) is highest in Asia, with the highest incidence and deaths reported in India. Rabies continues to claim an estimated 20,000 lives annually in India.[1] The reason for this high number of deaths is due to a disease that is preventable is attributable to lack of awareness among people about management of animal bites which prevents them from obtaining medical care including Post Exposure Prophylaxis (PEP) and also non compliance to the PEP schedule. This situation exists in spite of appropriate PEP being available, the use of which would further bring down the occurrence of Rabies deaths in India significantly.[2,3,4]

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Studies have shown that the dropout rates in people receiving PEP are high and despite efforts made by health professionals the dropout rates continue to remain high.[4] In rabies endemic areas, re-exposure to rabies is common with an incidence up to 15%.[5] As rabies is 100% fatal, it is very important to provide timely and correct post exposure prophylaxis in such cases. Most of the Asian counties use the arbitrary cut-off of either three or six months post reliable vaccination when boosters are not deemed to be required.[6,7] The WHO recommends two booster vaccinations for persons who have previously received complete Post Exposure Prophylaxis (PEP) or Pre Exposure Prophylaxis (PrEP).[8]

Re-exposure to Rabies is a short form of repeat exposure where the patient has suffered at least one or sometimes many exposures previous to the one for which the patient seeks treatment. It is quite common in India. The WHO recommends two doses of a cell culture vaccine separated by 3 days for Rabies exposed persons, who have previously received complete pre or post exposure vaccination.[7] There are limited studies on PEP among the re-exposure cases and there is a need for studying the compliance to re-exposure treatment with two doses of ARV.

OBJECTIVES

The present study was conducted with the following objectives

1. To study the socio-demographic profile of re-exposure cases.
2. To know the time interval after of previous exposure and its treatments.
3. To study the nature of re-exposure & type of animal bites.
4. To assess the compliance to IDRV schedule among the re-exposure cases.

METHODOLOGY

The study was conducted at the Anti Rabies Clinic of MKCG Medical College, in Berhampur, Odisha. All cases of Re-exposure to animal bites who reported during 1st January to 31st December 2014 were included as study subjects. Patients with exposure to animal bites and had previously been completely vaccinated with anti rabies vaccine(IM/IDRV) or ARV with RIG for either post -exposure prophylaxis or received pre-exposure prophylaxis previously were taken as study subjects for re-exposure. It was a record based hospital study. Cases who had not completed the previous post-exposure treatment and cases with re-exposure with-in the period of post exposure treatment were excluded from the study.

RESULTS AND DISCUSSION

During this study period total new cases registered for post exposure treatment to due animal bites were 5387. Total number of re-exposure cases reported during the study period was 774 (14.36%).

Patients reporting for re-exposure and who completed the previous PEP were 604 (11.21%). Patients reporting for re-exposure within the treatment period were 97 cases (1.81%). Patients reporting for Re-exposure but did not complete the previous post-exposure treatment (PEP) were 73

Table 1
Distribution of re-exposure cases

Total number of animal bite cases	5387	
Re-exposure cases	**Number**	**%**
After completion of previous PEP treatment	604	11.21
Within treatment period of present PEP	97	1.81
Not completed the previous PEP treatment	73	1.35
Total	**774**	**14.36**

Table 2
Distribution of re-exposure cases

Type of previous exposure	Numbers		Percentage	
Pre exposure prophylaxis (IM)	27		4.54	
Post exposure prophylaxis (ID)	577		95.46	
	Category II	Category III	Category II	Category III
	13	564	2.27	93.19
Total	604		100	

cases (1.35%). We included these 604 patients as our study subjects.

Among the re-exposure cases males accounted for 61.3% & females 38.7%. Majority (62%) of the re-exposure cases were adults and 38% were children below 14 years. Similar finding was observed by Mahendra BJ et. al. in their study at Mandya where they found 72.5% of the re-exposure cases were males and 37.3% were children less than 15 years of age.[9]

Among the re-exposure cases, exposure to dog was noticed in majority of cases (90.9%) followed by monkey in 6.81% and cat in 2.27% of cases. Among all re-exposure dog bite cases only 10% were due to bite of pet dogs and rest were stray dogs. Among the re-exposure to pet dog bite cases, 4.5% cases had exposure to the same pet dog. Mahendra BJ et al also noticed in their study at Mandya that 94.2% of the re-exposure cases were because of dog bites.[9]

Among the re-exposure cases only 4.54% had taken Pre-exposure prophylaxis through IM route previously. Rest 95.46% had received the Post exposure prophylaxis (PEP) treatment with either only IDRV (2.27% cases of category II) or IDRV & ERIG (93.18% category III bites) previously.

All these Re-exposure cases had Category III exposures. However in a study at Mandya by Mahendra BJ et al it was observed that 76.6% of the re-exposure cases were Category III exposure and rest 33.4% were Category II animal bite exposure.[9]

Re-exposure cases were most encountered (35.4%) after 3 months & within 6 months of previous treatment for animal bite exposure. However still 11.36% of the re-exposure cases were encountered even after 1 year. But Mahendra BJ et al in their study at Mandya found the mean time interval between the first and subsequent exposure to be 11.3 ± 9.4 months and the range from 1 to 36 months.[9]

All these re-exposure cases reported to the ARC within 24-48 hours of the present exposure. However when compared with the reporting time to the ARC with previous exposure it was found to be statistically significant ($p<0.05$). Still this delay of nearly one day after the exposure in reporting to the ARC in re-exposure cases is a matter of concern as all the subjects were made aware the need to report early (within 24 hours) during their treatment for previous exposure. Similar finding was observed by Mahendra BJ et al where the mean time of reporting to the ARC of MIMS after re-exposure was 24.24 ± 24.06 hrs and the range was from 1 hour to 144 hours. They also found a delay of nearly a day in reporting to the ARC after re-exposure.[9]

Table 3
Time interval of re-exposure

Time interval	Numbers	Percentage
1-3 months	143	23.7
3-6 months	214	35.4
6-12 months	179	29.54
>1year-5 year	68	11.36

More than two-third of the re-exposure cases (88.63%) had practiced some form of local wound treatment before reporting to the ARC like wound washing with plain water, soap and water, spirit, povidone iodine etc.Mahendra BJ et al in their study also reported a similar finding of 89.2% of the re-exposure cases had performed wound toilet. This shows an increase in the percentage of patients doing PEP correctly in their report exposure.[4,9]

Among the re-exposure cases majority (88.63%) have completed their 2 booster vaccination schedule i.e. on day 0 and day 3. It's a matter of concern that 11.37% patients of re-exposure are dropouts to the two dose of IDRV as booster dose to re-exposure. A less percentage of re-exposure cases (78.4%) at Mandya completed the two booster doses on day 0 & 3.[9] However the compliance to the two booster doses in re-exposure cases is more as compared to the PEP for the first exposures at Mandya and Berhampur.[9,10]

CONCLUSION

The present study highlighted the burden of re-exposure to animal bite in the study area. The performance of local wound washing was better and also the reporting time to the ARC following animal bite was within 24-48 hours in re-exposure cases. All the re-exposure cases were category III animal bites and 4.5% cases had been exposed to the same pet dog. However 11.37% patients of re-

exposure were dropouts to the two dose of IDRV indicating a need to increase awareness in the patients about the completion of booster dose to re-exposure.

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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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