Original Research Article

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Study of epidemiological profile and treatment seeking behavior in children attending anti rabies vaccination clinic at a tertiary care center

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ABSTRACT

Background: Rabies is an acute infectious highly fatal viral disease of the central nervous system leading to encephalomyelitis. It is primarily zoonotic disease of warm blooded animals. It is mainly transmitted by animal bites mainly dogs. In India alone, 20,000 deaths are estimated to occur annually. Rabies is most common in children aged less than 15 years. Till now no study of epidemiological profile and treatment seeking behavior in Children (<15 years) is carried at an anti-rabies vaccination (ARV) clinic, so with this background kept in mind the present study is planned.

Methods: The present hospital record based study is carried out at ARV clinic. All animal bite victims in age groups <15 years, coming between 1st January to 31 December 2017 at ARV clinic are recorded in details regarding history, epidemiological profile and ARV management in month of march 2018. The results were analyzed by proportion & percentages.

Results: Out of the total patients attending ARV OPD 30.25% of children were of age <15 years. About 93.09% of children were of Cat – III bite and maximum got bite on lower limb. About 86.05% of the children reported late by 24 hour. Out of the total children attending OPD 93.09% patients were advised for ARS of which only 92.88% of patient had taken ARS.

Conclusions: Most of children they are in cat-III so there is need to do counselling about taking PEP (ARV and ARS) treatment and treatment seeking behavior are poor in rural children.

Keywords: Animal bite, Anti-rabies clinic, Children, Immunoglobulin, Rabies

INTRODUCTION

Rabies is an acute infectious highly fatal viral disease of the central nervous system leading to encephalomyelitis. It is primarily zoonotic disease of warm blooded animals, particularly carnivorous such as dogs, cats, jackals and wolves. It is mainly transmitted by animal bites mainly dogs. Although rabies is 100% fatal disease, it is 100%

preventable. In spite of vaccine preventable disease, rabies still poses significant public health problem in many countries. Children are at higher risk to the animal bite because of their unawareness. Though most of the bites are generally more severe like lacerated wounds and are usually on proximal part of the body including face, neck and scalp and thus life-threatening. Still today when treatment options in the form of vaccine, immunoglobulin

are available, people as well as health care professional preferably in the peripheral hospitals have not realized its importance and thus treatment received is often not complete and satisfactory.² Vast majority of the estimated 55,000 deaths caused by rabies each year occur in rural area of Africa and Asia. In India alone, 20,000 deaths are estimated to occur annually. That is about 2 per lac population are at risk.3 Although all age group are susceptible, rabies is most common in children aged less than 15 years. 4,5 Till now no study of epidemiological profile and treatment seeking behavior in children (<15 years) is carried at a anti rabies vaccination (ARV) clinic, so with this background kept in mind the present study is planned. The objective of this study is to Study the socio demographic profile of children attending anti rabies vaccination clinic and to study treatment seeking behavior in children attending anti rabies vaccination clinic.

METHODS

The present hospital record based study is carried out at anti – Rabies Vaccination clinic at a tertiary care hospital of Dr. Shankarrao Chavan Government Medical College, Vishnupuri Nanded.

Type of study

It is hospital record based study.

Duration of study

From 1 January 2017 – 31 December 2017.

Place of study

Anti-rabies Vaccination clinic at a tertiary care hospital of Dr. Shankarrao Chavan Government Medical College, Vishnupuri Nanded.

Study subject

All recorded children of age <15 years attending ARV clinic are considered in study. No child of age <15 years on record was excluded every child with his clinical data and profile is studied. The results were analyzed by proportion & percentages. The chi – square test is applied

RESULTS

Out of the total patients attending ARV OPD 30.25% of children were of age <15 years. Out of total children attending OPD 50.29% and 49.71% were from rural and urban area respectively (Figure 1).

Out of total children attending OPD 71.01% were male. Out of total children attending in rural areas were 72.54% male and 27.46% female. Out of total children attending in urban area were 69.44% male and 30.56% female (Figure 2).

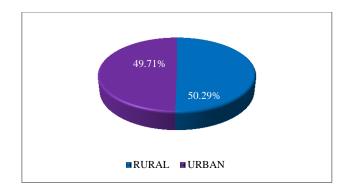


Figure 1: Distribution of study children according to residence.

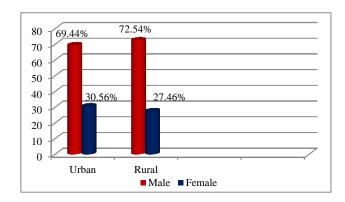


Figure 2: Distribution of patients according to residence and gender.

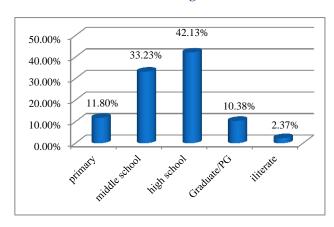


Figure 3: Distribution of study subjects according to their parents' education.

As far as education of parents is considered 42.13% were educated up to high school followed by middle school 33.23%, primary school 11.80%, graduate/PG10.38% & 2.37% of parents were illiterate (Figure 3).

93.09% of children were of Cat –III bite, 6.91% were of cat –II bite, there was no single patient of cat –I attending the OPD. About 16.42% patients having deep wound and 83.58% patients having superficial wound. Most of the bite of animal is dog. Out of bites 90.34% were dogs, 2.54% were cats and 7.12% were other animals (Table 1).

Table 1: Distribution of children according to wound characteristics.

Wound characteristics	Number of patients	Percentage (%)			
Category of bite					
Cat - II	95	6.91			
Cat - III	1281	93.09			
Type of wound					
Superficial	1150	83.58			
Deep	226	16.42			
biting animal					
Dog	1243	90.34			
Cat	35	2.54			
Others	98	7.12			

Table 2: Distribution of patients according to site of bite.

Site of bite	Number of the patients	% value
Head neck and face	68	4.94
Trunk	76	5.52
Upper limb	378	27.47
Lower limb	854	62.07
Total	1376	100

Regarding site of bite the maximum patients got bite on lower limb 62.07%, followed by upper limb 27.47% and 5.52% & 4.94% were on trunk and face respectively (Table 2).

Table 3: Association between residence of patient and ARS taken.

Residence of patients	ARS taken	ARS not taken	Total (%)
Rural	630	62	692 (50.29)
Urban	645	39	684 (49.71)
Total	1278 (92.88)	98 (7.12)	1376 (100)

Test: Fisher's exact test; p=0.0228; p<0.05, Statistically significant.

Out of the total children attending OPD 1281 (93.09%) pts. were advised for ARS of which only 92.88% of patient had taken ARS, the proportion of taking ARS was more in urban population (94.3%) than rural (91.04%) population (Table 3).

The children were attending ARV OPD within 24 hrs was only 13.95%, of which 53.14% were from urban population. The children were attending ARV OPD 1 to 7 day was 78.85%, of which 48.39% were from urban population. The children were attending ARV OPD more than 7 day was only 7.2%%, of which 47.47% were from urban population (Table 4).

Table 4: Association of residence and reporting of the patients to the ARV OPD.

Duration location	Within 24 hrs	1–7 days	>7 days	Total (%)
Rural	90	560	52	692 (50.29)
Urban	102	525	47	684 (49.71)
Total	192 (13.95)	1085 (78.85)	99 (7.2)	1376 (100)

Test: Chi-square test; $\chi^2 = 1.562$; df=2, p=0.4578. p>0.05, Statistically not significant.

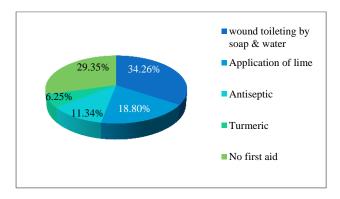


Figure 4: Distribution of patients according to first aid management.

The treatment seeking behavior in rural population is poor compared to urban population. Only 38.57% of patients got first aid treatment with wound toileting with soap and water, remaining 13.15%, 20.77%, 8.90% did the application of turmeric, salt & & antiseptic

respectively. 12.46% of patients came without any first aid treatment (Figure 4).

DISCUSSION

In this study, 30.25% OPD patients visiting to ARV clinic were children less than 15 years. A study done by Patle, Khakse, 37.32% of the children were in the age group of 5-10 years. Nearly 32.49% of children were less than 5 years which is a serious issue.² A study done by Behera et al and Mohanty et al showed prevalence of animal bite in children from 0 to 14 years to be more than 33%.^{6,7} Dog bite was the most common similar to those found by Bedi et al and Behera et al In our study although most common injury was abrasion, around 16.42% of the children suffered lacerated wounds, thus increasing the severity.^{6,8} However, 4.94% of children had injury on head and face. The injury on head and face was lacerated wound in most of the cases. According to study by Vinay et al most common site of bite was lower limb followed by upper limb and head and neck.9 In our study none belonged to category I bite. This also suggests unawareness of people to report to hospital in case of licking by animal. In a study by Behera et al majority of cases (95.6%) were having Category III exposure. Only 0.5% were Category I exposure which did not require any treatment. In our study, 13.95% of the children had reported within 24 hrs of animal bite. In a study by Behera et al, after exposure, 12.6% of the patients came to ARC within 24 h after exposure. 6 2.4% of subjects reported to the ARC after 7 days of exposure and 0.5% reported after 1 month of exposure. In a study by Khokkhar et al found that 31.03% reported after 24 hrs. 10 ARS is recommended for Category III wounds. But in our study, it was received by 92.88% of the children. A study by Vinay et al found only 8.2% of the Category III patients received ARS.9 In our study first aid that is washing wound with soap and water were practiced by only 34.26% cases. A study by Gadekar and Dhekale, first aid that is washing wound with soap and water were practiced by only 5.1% cases. 11 Lime application on the wound was most commonly practiced first aid treatment (63%). Other first aid treatment practices were application of antiseptics (4.3%), turmeric powder (20.3) and paste of bitter gourd leaf (8.7%).

It is concluded that most of children are in cat-III so there is need to do counseling about taking PEP (ARV, ARS) treatment as early as possible. The treatment seeking behavior is poor in rural children. Awareness of people about early first aid treatment is important for prevention of rabies. Majority of rural patient with class III dog bites are referred here (anti–rabies vaccination clinic at a tertiary care hospital) for ARS. So there is need to make ARS available at Primary health center, Rural hospital, Sub district hospital and District (civil hospital).

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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