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Profile of patients attending Anti Rabies Clinic at Madhav Dispensary, JA Group of Hospitals, Gwalior

Vikash Dwivedi[1], Manohar Bhatia[2*], Ashok Mishra[3]

[1]Medical Officer, District Hospital, Chhindwara (M.P.),India
[2]Demonstrator, Deptt. Of PSM/Community Medicine,SHKM, GMC, Mewat, India
[3]Professor, Deptt. Of PSM/Community Medicine, G. R. Medical College, Gwalior, India

ABSTRACT

Background: Rabies in humans is 100% preventable through prompt appropriate medical care. 20,000 people are estimated to die every year from rabies in India primarily because of stray dogs. Rabies continues to be a public health problem in India as there is no organised system of surveillance of rabies cases and there is hence a lack of reliable data. The aim of present study was to assess the profile of patients attending anti rabies clinic so as to make some contribution in data generation. **Methodology:** It was a cross sectional study conducted for the duration of six months in Anti-rabies clinic of Madhav Dispensary at J.A. group of hospitals Gwalior. All newly registered patients who consented to participate were included in the study. The sample size calculated was 1200 and the tool for collecting information was a semi structured questionnaire. **Results:** 73.91% cases had class II bite while 20.33% cases had class III bite while only 05.76% cases had class I bite. 65.17% bites were unprovoked while 34.13% bites were provoked. Dog bite was seen in 1033 cases while monkey bite was seen in 10.42% cases. **Conclusion:** The findings of present study clearly indicate that most of the animal bite cases require proper medical advice and adequate treatment. Health education to stimulate awareness and proper vaccination of pets can help in reducing the morbidity and mortality due to animal bites.

Keywords: Rabies, Dogs, Animal bite, Class II & III bite, Provoked bite

Introduction

Rabies is an infectious and contagious viral disease of the central nervous system that causes acute encephalitis [inflammation of the brain] in warm-blooded animals. [1] The term rabies is derived from the Latin rabies, "madness". This, in turn, may be related to the Sanskrit rabhas, "to do violence". The Greeks derived the word "lyssa", from "lud" or "violent"; this root is used in the name of the genus of rabies lyssavirus. [1] It is a Zoonotic disease, which is transmitted by bites and licks of rabid animals. [2]The disease commonly spreads by a bite from an infected animal, commonly dogs. For a human, rabies is almost invariably fatal if post exposure prophylaxis is not administered prior to the onset of severe symptoms. The rabies virus infects the central nervous system, ultimately causing disease in the brain and death. Because of its potentially violent nature, rabies has been known since 3500 B.C. and was described as early as 2300 B.C. [3] Rabies in humans is 100% preventable through prompt appropriate medical care. Most industrialized nations have effectively controlled Rabies. Even though the best methods for the prevention of Rabies are available in the world, the penetration of awareness regarding the use of these is still lacking and still more than 55,000 people, mostly in Africa and Asia, die from rabies every year - a rate of one person every ten minutes. The most important global source of rabies in humans is from uncontrolled rabies in dogs. [4]Out of total human deaths occurring annually from rabies worldwide, about 24,000 in

**Correspondence*
Dr. Manohar Bhatia
Medical Officer,District Hospital, Chhindwara (M.P.),India
Email: bhatiyamanohar@gmail.com

Africa and 31,000 occur in Asia of which 20,000 people are estimated to die every year from rabies in India alone — more than a third of the global toll. [4] India has the highest rate of human rabies in the world, primarily because of stray dogs whose number has greatly increased since a 2001 law forbade the killing of dogs. [5]Rabies is primarily a disease of terrestrial and airborne mammals, including dogs, wolves, foxes, coyotes, jackals, cats, bobcats, lions, mongooses, skunks, badgers, bats, monkeys and humans. The dog has been, and still is, the main reservoir of rabies in India. [6] Other animals, such as monkeys, jackals, horses, cattle and rodents, seem to bite incidentally on provocation. The number of cases involving monkey bites has been increasing in the last few years. Monkeys are susceptible to rabies, and their bites necessitate post exposure prophylaxis. [6]India has made rapid strides in space satellites and demonstrated nuclear capabilities and is known world over for its expertise and man power in computer sciences, soft ware technical and health sciences. It is envisioned by the national leaders that by 2020 the country should be transformed in to the developed nation. Despite all these both sylvatic and urban rabies has been present in India since ancient times. Rabies is present in all over the country except on the islands of Lakshadweep and Andaman & Nicobar. Cases are seen throughout the year. Rabies continues to be a public health problem in India as there is no organised system of surveillance of rabies cases and there is hence a lack of reliable data. [7] Hence the present study was undertaken to assess animal bite cases in terms of patients profile and

Methodology

The present study was conducted in Anti-rabies clinic of Madhav Dispensary at J.A. group of hospitals Gwalior [M.P.] which is the teaching hospital of G.R. Medical College Gwalior. The centre derives its patients not only from Gwalior district but also surrounding districts of Madhya Pradesh, as well as from neighboring states like Uttar Pradesh and Rajasthan. It was a cross sectional study conducted for the duration of six months from July 2011 to December 2011. All newly registered patients were interviewed with the help of a questionnaire on their first visit. Study population included all the patients attending Anti Rabies Clinic at Madhav Dispensary during the study period. The Anti-rabies clinic remains closed on all Sundays and Government holidays. The permission to conduct the study was taken from the Ethical Committee, G.R. Medical College, Gwalior. Verbal consent was obtained from every patient after explaining the purpose, nature and procedure of study and they were assured that confidentiality would be strictly maintained. The option of withdrawal from the study was always available. All newly registered patients attending anti rabies clinic who consented to participate were included in the study. The patients who were registered before the start of study period were excluded from study. An average of 10-15 new patients of animal bite are registered at the anti-rabies clinic every day. After adjusting Sundays and government holidays, there are 23-24 working days every month. For the purpose of our study, a lower value of 10 patients per day was taken for 20 days a month taking monthly total to 200 patients. Since the study was conducted for six months the sample size calculated was [6x200] 1200.A semi structured questionnaire was drafted to collect information about biting animal, site of bite and number of wounds, time of bite, whether the bite was provoked or unprovoked, duration and cause of delayed response, history of any primary treatment and patient's information about the animal bite. Information regarding treatment provided to the patients was also noted in the proforma. Information regarding socio demographic variables like age, education, income, profession etc was also collected. The data collected were entered in the excel sheet every day and were finally analyzed using percentage, proportion and appropriate statistical test like chi-square and p value.

Provoked -A provoked bite would occur if a person teases a dog or tries to take away the dog's food while the dog is eating. [8]

Unprovoked -An unprovoked bite may occur if the person are sitting in their backyard and a raccoon runs out of the woods and attacks them for no known reason. A stray dog that approaches a person and begins to bite them would be considered unprovoked. [8]

Types of contact are: [9]

Category I – Touching or feeding animals, licks on the skin

Category II – Nibbling of uncovered skin, minor scratches or abrasions without bleeding, licks on broken skin

Category III – Single or multiple transdermal bites or scratches, contamination of mucous membrane with saliva from licks; exposure to bat bites or scratches, monkey bites

Observations

Table 1: Profile of Patients [n=1200]

S. No.	Profile of Patients	% Of Cases [n]
A.	**Sex**	
1.	Males	80.09 [961]
2.	Females	19.91 [239]
B.	**Place of Residence**	
1	Urban	34.75 [417]
2	Rural	41.23 [496]
3	Slum	23.92 [287]
C.	**Occupation**	
1.	Professional & Semi-Professional	03.42 [41]
2.	Home Maker	06.76 [081]
3.	Student	32.08 [385]
4.	Skilled	04.41 [53]
5.	Semi-skilled	08.92 [107]
6.	Unskilled [labor]	21.92 [263]
7.	Farmer	10.16 [122]
8.	Others	12.33 [148]

Table 2: Distribution of Cases according to Age and Class of bite [n=1200]

Age-Group [Yrs]	% of Class I bites [n]	% of Class II bites [n]	% of Class III bites [n]	Total [n]
0-5	11 [15.94]	17.92 [159]	17.21 [42]	17.67 [212]
06-10	14 [20.29]	20.63 [183]	25.41 [62]	21.59 [259]
11-20	19 [27.55]	25.03 [222]	28.28 [69]	25.83 [310]
21-30	11 [15.94]	16.23 [144]	22.13 [54]	17.41 [209]
31-50	08 [11.59]	13.98 [124]	08 [03.28]	11.67 [140]
51 & Above	06 [08.69]	06.21 [55]	09 [03.69]	05.83 [070]
Total	**05.76 [69]**	**73.91 [887]**	**20.33 [244]**	**100 [1200]**

Table 3: Distribution of study subject according to site of Animal bite [n=1200]

S. No.	Sight of bite	% of Cases [n]
1.	Head, Neck, Face	12.17 [146]
2.	Upper Limb [Right & Left]	18.33 [220]
3.	Chest, Abdomen, Back	07.59 [91]
4.	Lower limb[Right & Left]	61.97 [743]
Total		**100 [1200]**

Table 4: Profile of biting animals [n=1200]

S. No.	Profile	% Of Cases [n]
A.	**Circumstance of Bite**	
1.	UNPROVOKED	65.17 [782]
2.	PROVOKED	34.83 [418]
B.	**Biting Animal**	
1.	Dog	86.08 [1033]

2.	Cat	00.67 [08]
3.	Monkey	10.42 [125]
4.	Others	02.83 [34]
C.	**Vaccination Status of Animal**	
1.	Vaccinated	15.26 [183]
2.	Not Vaccinated/ Status unknown	84.74 [1017]
D.	**Ownership of Biting Animal**	
1.	Pet	19.09 [229]
2.	Stray	54.33 [652]
3.	Untraceable	26.58 [319]
E.	**Status of Animal after bite [n=1178]***	
1.	Live <10 days	05.17 [62]
2.	Live >10 days	68.25 [797]
3.	Untraceable	26.58 [319]

***22 patients did not returned after 10 days**

Results

In our study, 80.19% (961) cases were males while 19.91% [239] cases were females. 417 (34.75%) cases belonged to urban areas while 496 (41.23%) cases belonged to rural areas and 287 (23.92%)cases were from slum areas. In present study, 32.08% (385)cases were students while 21.92% (263) cases were unskilled laborers, 10.16% (122) cases were involved in agriculture related activities. 08.92% [107] were semiskilled, 04.41 [53] were skilled workers while professionals were only 03.42% (41) of total cases which included, doctors, govt. officers, businessmen, engineers, lawyers etc. Other formed 12.33% [148] of total cases which included preschool children and unemployed persons. Homemakers formed 06.76% (81) of total cases. [Table No. 1]In our study 17.67% (212) cases were in 0-5 year age group while 21.59% (259) cases were in 06-10 years group, 25.83% (318) cases in 11-20 years age group, 17.41% (209)cases in 21-30 year age group, 140 (11.67%) cases in 31-50 years age group and 05.83% (70) cases in above 50 year age group. [Table No. 2] In this study 73.91% (887)cases had class II bite while 20.33% (244) cases had class III bite while only 05.76% [69] cases had class I bite. [Table No. 2] In this study 12.17% (146) case had bite on head, neck & face while upper limb bites were seen in 18.33% (220) cases & lower limb bites were seen in 61.97% (743) cases. Only 07.59% [91] bites were seen in chest, abdomen & back. [Table No. 3]In our study 65.17% (782) bites were unprovoked while 34.13% (418) bites were provoked. Dog bite was seen in 1033 (86.08%) cases while monkey bite was seen in 10.42% (125) cases. In present study 84.74% (1017) cases were bitten by unvaccinated animals and only 15.26 % (183) cases were bitten by reportedly vaccinated animals. In our study the biting animal was alive even after one month of bite in 43.17% (506) cases while in 05.17 % (62) cases the animal died within 10 days after bite. In 26.58% (319) cases the animal went untraceable. **[Table No. 4]**

Discussion

A study done by Sudarshan *et al* [10] showed that more number of males visited animal bite as compared to females and the trend was similar in our study as well. The reason may be that more men go out for work as compared to women and that women are better clothed then men. In a study done by Gadekar *et al*,[11] urban population was 37.90% while rural population was 62.10% which was comparable to our study where 34.75% cases belonged to urban areas, 41.23% cases belonged to rural areas and 23.92% cases were from slum areas. In a study done by Dzikwi *et al* [12] farmers and unskilled workers formed above 50% of cases. In a study done by Kumar *et al*, [13] farmers and laborers formed 50% of total cases while students formed 09.61% of cases. Similar findings were reported by Tenzin *et al* [14]. In our study, students and unskilled laborers comprised 54% cases while farmers constituted only 10.16% cases. Many students gave history that they fell victim to animal bite while going to or coming back from school or coaching. In a study done by Behera *et al*,[15] children from 0-14 year age group constituted 38.90% of total cases while 15-45 year age group constituted 46.4% of cases. In a study done by Vinay *et.al* [16] more than half of bite [55.44%] cases were below 20 year of age. In our

study, 65.09% cases belonged to below 20 year age group. In our study 73.91% cases had class II bite while 20.33% cases had class III bite. Gadekar *et al* [11] reported 92.50% cases having class III bite. A study done by Arvind kumar *et al* [13] reported 64.75% cases having class III bite. A study done by Renu Bedi *et al* [17] reported 69.12% cases having class II bite. In our study lower limb bites were seen in 61.97% cases and upper limb bites were seen in 18.33% cases. Gadekar *et al* [11] reported maximum incidence of bites in lower limb which was similar to our study. In our study, 65.17% bites were unprovoked while 34.13% bites were provoked. Behera *et al* [15] reported 56.60% unprovoked bite & 43.40% provoked bites. Gadekar *et al* [11] reported similar finding. In our study the biting animal was alive even after 1 month of bite in 43.17% cases. In a study by Sudarshan *et al* [10] 67% animals were alive even after one month of bite.

Conclusion

The present study clearly indicates that a large number of cases were below 15 years of age and more than 90% bites were class II or III bites. Also most of the bites were by stray animals and in case of bites due to pets, most of them were unvaccinated. All these findings clearly indicate that most of the animal bite cases require proper medical advice and adequate treatment. Control of stray animals can reduce the incidence of animal bites. Health education to stimulate awareness towards animal bites and proper vaccination of pets can help in reducing the morbidity and mortality due to animal bites.

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