

Title: CLINICAL PROFILE OF HYDROPHOBIA CASES AND FACTORS ASSOCIATED FOR NOT TAKING POST EXPOSURE PROPHYLAXIS, SMS HOSPITAL JAIPUR (2010-2012)

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Keywords Hydrophobic cases, factors causing rabies. improper PEP

Abstract Post exposure anti rabies treatment (PEP) with vaccine and serum is usually very effective in prevention of Rabies. If given promptly, in adequate doses, with right schedule and at right site. It was observed that people either do not take it or delay it unnecessarily. The factors like ignorance, cost, and non availability, myths & misconception contributes for poor management of animal bite cases despite the clear history of animal bite and availability of PEP.

Original Article

Clinical Profile of Hydrophobia cases and Factors associated for not taking Post Exposure Prophylaxis, SMS Hospital, Jaipur (Year 2010 to 2012)

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SUMMARY

Introduction:

Post exposure anti rabies treatment (PEP) with vaccine and serum is usually very effective in prevention of Rabies, if given promptly, in adequate doses, with right schedule and at right site. It was observed that people either do not take it or delay it unnecessarily. The factors like ignorance, cost, non availability, myths & misconception contributes for poor management of animal bite cases despite the clear history of animal bite and availability of PEP. The present study thus is an attempt to 1) describe the epidemiological and clinical profile of Hydrophobia cases admitted in Isolation Ward of SMS Hospital, Jaipur, during Jan 2010 to Dec 2012. 2) find out the factors for not taking adequate PEP after animal bite in hydrophobia cases.

Methods:

Total 112 hydrophobic cases admitted to Isolation ward in 3 years (Jan 2010 to Dec 2012). Clinical profile of all these cases was obtained from case records. In-depth interview of Family members of 11 patients who did not take adequate PEP and reported during June to Dec. 2013, were conducted to assess why they did not take post exposure treatment and also factors associated with poor management of animal bite cases.

Results:

89 (79.46%) were males and 23 (20.53%) were female with a mean age of 32.26 yrs. Majority of the patients (72.3%, 81/112) came from rural Areas. Almost 89% cases had a history of dog or cat bite. 12 cases (11%) were bitten by wild animals. 94.6% (106/112) patients either did not receive PEP (86/112) or received incomplete PEP (20/112). There was a wide range of incubation period i.e. 5 day to 17 years. The most frequent prodromal symptom was fever (26.8%). Signs of Central Nervous System involvement like altered sensorium and abnormal behaviour were seen in 20.83% and 16.67% respectively. Family members of 69 patients (62%) took their patient back at home against medical advice once they came to know about the diagnosis of the disease. In-depth interviews revealed that 82% (9/11) took their bite casually. They consider dogs and cats may bite humans as they live in close proximity and this is inconsequential. They were also under the impression that wild animals could not be rabid. High cost of treatment was a barrier for 64% of (7/11) cases and they were not aware of free of cost availability of PEP in Government hospitals. Non availability of Anti rabies serum in rural areas was revealed by almost 10% (1/11). Relatives of all 11 cases were unaware of doses, site of injection, benefits of immediate wound washing, necessity of local antiserum administration.

Conclusion:

Development of Hydrophobia after animal bite is mainly accounted to lack of awareness regarding rabies risk and the poor management of animal bites. Increasing community awareness and proper adequate management with PEP can prevent Rabies.

Key Words : Hydrophobia cases, factors causing Rabies, improper PEP.

INTRODUCTION

There are around 20,000 reported cases of Rabies every year in India¹. Majority of the cases are from rural areas and low socio economic background. Post exposure anti rabies treatment (PEP) with vaccine and serum is usually very effective in prevention of Rabies², if given promptly, in adequate doses, with right schedule and at right site. It was observed that people either do not take it or delay it unnecessarily. The factors like ignorance, cost, non availability, myths & misconception contributes for poor management of animal bite cases despite the clear history of animal bite and availability of PEP.

Rabies cases presents with headache, malaise, sore throat, fever, restlessness, insomnia, excitement, spasms, intolerance to noise, bright light or cold draught of air, hydrophobia, aerophobia. Tingling at the site of bite is a specific early symptom in prodromal stage.

The present study thus is an attempt to 1) describe the epidemiological and clinical profile of Hydrophobia cases admitted in Isolation Ward of SMS Hospital, Jaipur, during Jan 2010 to Dec 2012, and 2) to find out the factors for not taking adequate PEP after animal bite in hydrophobia cases.

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MATERIAL AND METHOD

This hospital based observational, descriptive study was done at SMS Hospital, Jaipur during June to Dec. 2013. Data were collected from case records of patients admitted in last three years i.e Jan 2010 to Dec 2012. Total of 112 hydrophobic cases were admitted to the Isolation ward in 3 years. Information regarding age, sex, residence, type of biting animal, time lag between bite and development of Rabies, presenting symptoms, duration of hospital stay were collected from case sheets of patients on a pre designed schedule and analyzed using the excel 2007. In-depth interview of Family members of 11 patients who did not take adequate PEP and reported during June to Dec. 2013, were also conducted to assess why they did not take post exposure treatment and also factors associated with poor management of animal bite cases. Qualitative and quantitative data were analysed using Proportions, Chi square, mean, SD and ANOVA.

OBSERVATION

Out of 112 hydrophobia cases, 89 (79.46%) were males and 23 (20.53%) were female. Mean age of patients was 32.26 (range 5-77 years SD 21.91), about half (55/112) of total cases were in economically productive age group i.e 19-60 years. Majority of the patients (72.3%, 81/112) came from rural Areas. Almost 88% (99/112) cases had a history of dog bite and one had cat bite. Almost 11% (12/112) cases were bitten by wild animals. 94.6% (106/112) patients either did not receive PEP (86/112) or received incomplete PEP (20/112).

One case took full course of vaccine but no RIG. Only 5 cases started getting vaccines with anti-rabies serum. Out of these five, two cases took all five vaccine injections but at wrong site i.e Gluteal region, rest three developed hydrophobia before they could receive full course of PEP. There was a wide range of incubation period i.e. 5 day to 17 years. Median incubation period was 35 days while mean after

Table 2
Post Exposure Prophylaxis status according to Area of living

PEP status	Residence		Total	P (Chi-square test)
	Urban (%)	Rural (%)		
Complete with Anti serum	2 (6.45)	4 (4.93)	6	P=0.664
Partial PEP	7 (22.58)	13 (16.04)	20	
No Pep	22 (70.96)	64 (79.01)	86	
Total	31	81	112	

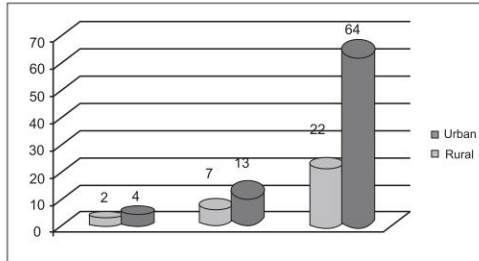


Chart -2 PEP status as per the living area

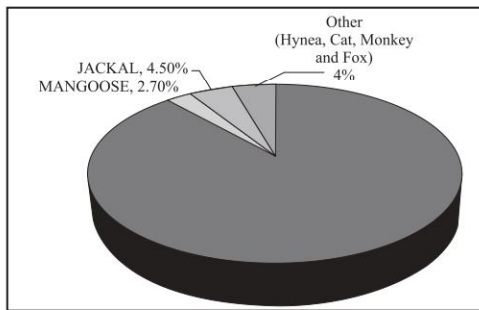


Chart -3 Type of Animal Bite

Table 3
Development of Hydrophobia after Animal bite

Site of Bite	Mean IP	Std. Deviation	P (ANOVA)
Face & Head (34)	26.91	17.14	=0.029
Leg/ Thigh/ Hip (40)	423.25	1050.87	
Hand/ Foot/ fingers (38)	150.79	276.44	
Total (112)	210.49	664.40	

Table 4
Detail of patients who started PEP

Sl. No.	Age (Yrs) & sex of patients	Type of animal	Grade	Site	Doses of ARV	ARS	Death (days after bite)
1	60 M	Rabid dog	3	Face	4	Taken	20
2	55 M	Street dog	3	Leg	5 (gluteal region)	Taken	90
3	35 M	Rabid dog	3	Genital region	1	Taken	7
4	8 M	Rabid dog	2	Leg	5 (gluteal region)	Not Taken	730
5	5 M	Rabid dog	3	Face	3	Taken	22
6	8 M	Rabid dog	3	Face	4	Taken	20

excluding extreme 7 cases was 106.15 days; SD 174.37. The incubation period was significantly lower in case of at face and head (26.91±17.14) compared to hand/foot/fingers (150.79±276.45) and

Table 5
Clinical presentation of Hydrophobia cases

Symptoms	Number	Percent
Irritation and Pain at Site of Bite	7	5.4
Fever	30	26.8
Aerophobia	46	41.1
Hydrophobia	91	81.3
Photophobia	2	1.8
Noise phobia	2	1.8
Body ach	8	6.67
Vomiting	11	9.17
Altered sensorium	25	20.83
Abnormal behaviour	20	16.67
Neck rigidity	2	1.67
Rigidity in limbs	1	0.83
Parasthesia	3	2.50
Salivation	2	1.67
Dysphagia	3	2.50
Paraperesis	3	2.50
Breathlessness	9	7.50

leg/thigh/hip (423.25 ± 1050.87). ($p < 0.05$) The most frequent prodromal symptom was fever (26.8%). Signs of Central Nervous System involvement like altered sensorium and abnormal behaviour were seen in 20.83% and 16.67% respectively. Signs of autonomic nervous system dysfunction included hydrophobia (81.3%), hyper salivation (2.5%), and dyspnoea (7.5%) were also observed. On admission, 21 of 112 patients (19.7%) showed paralytic manifestations, while the rest 91 (81.3%) showed signs of CNS excitement. Mean duration of hospital stay was 1.75 days (SD 1.82, range 1-14 days). Family members of 69 patients (62%) took their patient back at home against medical advice once they came to know about the prognosis of the disease. Only 43 (38%) patients stayed back at hospital till they died.

In-depth interviews revealed – 82% (9/11) took their bite casually. They consider dogs and cats may bite humans as they live in close proximity and this is inconsequential. They were also under the impression that wild animals could not be rabid. High cost of treatment was a barrier for 64% of (7/11) cases and they were not aware of free of cost availability of PEP in Government hospitals. Non availability of Anti rabies serum (RIGs) in rural areas was revealed by almost 10% (1/11). Relatives of all 11 cases were unaware of doses, site of injection, benefits of immediate wound washing, necessity of local antiserum administration.

DISCUSSION

Animal bite is still a major public health problem in children and adults in India. Majority (88.4%) of cases in present study were bitten by dog followed by jackal 4.5% and mongoose 2.7%. One case each of monkey, cat, fox, Hyena and Mongoose were also reported. Chery¹ Travasson³ and M K Sudershan¹ reported that 95% and 91% bites in India were dog bites. In the present study maximum case reported from rural areas 72.3%. Manish Kumar Singh⁴ and T R Behra et al⁵ also reported maximum cases 84.6% and 59.9% respectively from rural areas. In the present study male sex (79.46%) was predominant victim, similar to T R Behra et al⁵, M K Sudershan¹ Jairaj Singh Hanspal⁶ and Manish Kumar Singh⁴ In the present study most of the patients 49.1% were in the adult age group (19-60), followed by 39.7% young (0-18 years) and 13.5% were in old age group (>60 years) these result were contrary to reported by Kashyap A⁷, where they reported maximum patients in age group below 16 years (67.76%), followed by 18.7% in 16 to 45 years. Bites site were almost similar in the Leg / Thigh / Hip / Arm / Forearm (35.7%), Hand / Foot / Fingers (33%) and the Head / Neck / Face (30.4%). only one case of bite at genital region was reported. TR Behra et al⁵, Sampath et al⁸ and Manish Kumar Singh et al⁴ reported lower extremities as most common site of bite. After excluding the 7 extreme values mean Incubation Period reported in present study was 106.15 ± 174.37 days. Including these extreme 7 values Median Incubation Period was calculated 35 days, ranged from 5 days to 17 years. This was lower than Incubation Period (68 ± 40 days) reported by Kashyap A.⁷ Mean Incubation Period was significantly lower in cases of bite at Face / Head / Neck (26.9 days) compared to Hand / Foot / Fingers (150.8 days) and Leg / Thigh / Hip (423.2 Days), about similar result were reported by M Susilawathi⁹ The present study illustrates that most patients (76.7%) did not receive proper rabies vaccination, or passive immunization post-exposure while Manish Kumar Singh⁴ reported this proportion to be (85%). Only 5.4% (6) received post-exposure vaccination. Four cases (4) among those received PEP the vaccination regimens were not completed because of a short incubation period and the onset of symptoms within 1-3 weeks of bites on the head, neck and genital region. Two patients completed their vaccination regimen but over the gluteus region which hampers vaccine potency¹⁰. No significant ($p > 0.05$) association was found in PEP status of cases

and place of residence (urban/rural). Majority (81%) of the cases reported with the characteristic features of hydrophobia (furious), while 19% cases presented with features of encephalitis (paralytic). The most frequent prodromal symptom reported in current study was fever (26.8%), altered sensorium (20.83%) and abnormal behaviour (16.67%). About 62% went away home (LAMA/Abscond) after being briefed about Rabies by medical as well as paramedical personnel regarding the 100% fatality of the disease. About 39% stayed in hospital till death. The probable reason for their staying back at hospital are faith and hope for recovery, to avoid discrimination by the society, not to spread the dreaded infection to other members of the family. Present study reported that a patient stayed in hospital on an average for 1.75 ± 1.82 days.

CONCLUSION AND RECOMMENDATION

Development of Hydrophobia after animal bite is mainly due to lack of awareness regarding rabies risk and the poor management of animal bites. Increasing community awareness and proper and adequate management with PEP can prevent Rabies.

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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 publication in the Newsletter.

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