

Knowledge and Attitude about Rabies and its prevention among Practicing Physicians in urban Bengaluru

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ABSTRACT

INTRODUCTION: Rabies is a preventable enzootic endemic disease in India which contributes to 35% of overall rabies-related deaths of the world. Knowledge and a healthy attitude towards the Post Exposure Prophylaxis (PEP) measures against Rabies is the need-of-the-hour among medical practitioners.

OBJECTIVE: To assess the Knowledge and Attitude of PEP among medical practitioners in urban Bengaluru.

METHODOLOGY: Medical practitioners were interviewed at their workplace using a pre-tested, structured questionnaire. Results of the statistical analysis are presented in the form of proportions and percentages..

RESULTS: The study included 62 medical practitioners. Only 51.61% and 54.83% of the physicians knew that scratches and licks could also transmit the infection and only 54.83% mentioned hydrophobia as a symptom. 19.35% of them stated that rabies was treatable.

Regarding the knowledge of PEP, 70.97% knew that the immediate measure was to wash the wound with soap and water and around 88.71% of subjects were not aware about the correct categorization of wounds. 58.06% quoted the ARV schedule correctly. Only 19.35% knew about the intradermal schedule of ARV, 64.51% subjects knew that RIG was administered around the wound and 9.68% knew the schedule to be followed in case of previous dog bite history.

CONCLUSION: The knowledge and attitude about Rabies PEP among physicians was very superficial "working knowledge" and majority of the subjects were not abreast of the latest WHO guidelines on Rabies.

KEY WORDS: Rabies, Knowledge and Attitude, Post Exposure Prophylaxis, Practicing Physicians

Introduction

Rabies (Rage or Madness in Latin) is a viral disease that causes acute inflammation of the brain in humans and other warm-blooded animals. It is caused by Lyssaviruses, a genus of RNA viruses in the order Mononegavirales, in the family Rhabdoviridae. Humans, mammals, and vertebrates serve as

natural hosts. Rabies is spread when an infected animal bites or scratches another animal or human. Saliva from an infected animal can also transmit rabies.

This risk of developing rabies after the exposure is increased if the biting mammal is a known rabies reservoir, if the animal looks sick or displays an abnormal behavior, if the wound or mucous membrane was contaminated by the animal's saliva, if the bite was unprovoked and, and if the animal was not vaccinated (1,2).

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Rabies is a 100% vaccine-preventable disease yet, continues to kill humans. 99% of such human deaths occur in Africa and Asia. Globally, dogs are the most common animals involved. Dog-mediated rabies kills tens of thousands of people every year, many of whom are children. In India, dogs are involved in 91.3% of the cases. About 75% of rabies-related deaths occur in rural areas of India. The WHO Global Burden of Disease Study estimates that rabies killed 23,500 humans in 2013. India reports about 18,000 to 20,000 cases of rabies a year and about 36% of the world's deaths from the disease (3,4,5).

There is no treatment once the disease has developed. Once symptoms appear, death nearly always results. Hence, prevention is the only mode and the success in prevention and control of the disease depends considerably on the effective implementation of the Post Exposure Prophylaxis (PEP). This in turn depends on the level of knowledge on PEP measures in the form of Anti-Rabies vaccination (ARV) and Rabies

Immunoglobulin (RIG) among the Practicing Physicians. Therefore, this study was undertaken with the objective to assess the Knowledge and Attitude regarding PEP as per WHO guidelines among practicing physicians.

Material and Methods

This was a descriptive study conducted over a period of 3 months in Urban Bengaluru in 2016. A total of 62 medical practitioners were interviewed through purposive sampling based on the feasibility of conducting the study. All those willing to participate and those who had been practicing medicine for a minimum of one year were included. The subjects were interviewed at their workplaces using a pre-tested, structured questionnaire. A 3-point modified Likert scale was applied to measure attitude. Ethical clearance for the conduct of the study was taken from the Institutional Ethical Committee (IEC) before the start of the study. Results of the statistical analysis are presented in the form of proportions and percentages.

Results

Out of the total of 62 medical practitioners, 40(64.51%) were males and 22(35.48%) were females. The age range was from 24 to 70 years. The median age was 45 years (Table 1).

Table-1. Distribution of study subject according to age and sex

Age(in years)	Male	Female	Total
20-29	8 (20%)	6 (27.27%)	14 (22.58%)
30-39	6(15%)	4 (18.18%)	10(16.13%)
40-49	8(20%)	8 (36.36%)	16(25.81%)
50-59	8(20%)	4(18.19%)	12(19.35%)
> 60	10(25%)	-	10(16.13%)
Total	40 (100%)	22 (100%)	62 (100%)

(Figures in parenthesis indicate percentage)

56(90.32%) of the interviewed physicians had treated animal bites previously and only 6 (9.68%) had never treated animal bites. Among the 56

physicians, 40(64.51%) had experience of treating animal bite case for more than 11 years, 8 (12.90%) had 1-5 and 6-10 years of experience each.

The average consultation fee for a case of dog bite among 28 (45.16%) doctors ranged from Rs. 50 to Rs. 600. More than half of the doctors 34 (54.84%) chose not to disclose the fee.

Only 50 (80.64%) of the subjects knew that bite of the animal transmits the disease, 32 (51.61%) and 34 (54.83%) knew that scratches and licks, respectively, could also do so (Table 2).

Table-2. Modes of transmission of the disease

Bites	50 (80.64%)
Scratches	32 (51.61%)
Licking	34 (54.83%)
Cuddling	2 (1.61%)

Only 34 (54.83%) of medical practitioners mentioned hydrophobia as a symptom of the disease, despite it being pathognomonic. 6 (9.68%) and 8 (12.90%) physicians each, mentioned hyper salivation and aerophobia - the other classical findings. A variety of other signs and symptoms were also quoted as mentioned (Table 3).

42 (67.74%) of the physicians stated that there was no treatment for the disease, while 12 (19.35%) stated that treatment was available. Some physicians noted that while curative treatment is not available, supportive therapy could still be provided.

Table-3. Symptoms of the Disease

Fever	6 (9.68%)	Paralysis on provocation	2 (3.22%)
Hydrophobia	34 (54.83%)	Aerophobia	8 (12.90%)
Hyper salivation	6 (9.68%)	Irritability	8 (12.90%)
Neck muscle spasm	12 (19.35%)	Respiratory distress	2 (3.22%)
Dysphagia	4 (6.45%)	Confusion & Hallucinations	8 (12.90%)
Body ache	2 (3.22%)	Not answered	18 (29.03%)

44 (70.97%) of physicians stated that as an immediate measure, the wound has to be washed with soap and running water. 14 (22.58%) of them reported that the wound has to be washed only with water and 6 (9.68%) medical practitioners stated that the wound has to be covered with cotton/cloth. 52 (83.87%) of them knew that the wound should not be sutured, while 10 (16.13%) of them stated the converse. Some professionals specified that it had to be sutured only when very deep with involvement of a large surface area.

Around 24 (38.71%) professionals admitted that they were not aware of the categorization of bite wounds according to WHO guidelines. Of the 38 (61.29%) medical practitioners who said that they did know, a majority of them, i.e. 32 (51.61%) of

them categorized them incorrectly. Only 6 (9.68%) of the professionals were aware of the complete categorization according to the WHO guidelines.

52 (83.87%) of the professionals stated that the route of administration of ARV is intramuscular, but only 12 (19.35%) of them knew that it could also be given intradermally. 18 (29.03%) doctors mentioned the appropriate route as subcutaneous. Similarly, when asked about the site of administration of ARV, 48 (77.42%) of them mentioned the deltoid muscle, 16 (25.80%) also mentioned the anterolateral thigh, and 10 (16.13%) of them mentioned the gluteal region. Two of the doctors (3.22%) quoted the now obsolete practice of injecting onto the anterior abdominal wall.

When asked about the schedule for administration of ARV, 12 (19.35%) reported that they were unaware of it. Only 36 (58.06%) of them quoted the entire schedule correctly. Similarly, when asked about the correct dosage of ARV to be administered, 22 (35.48%) medical practitioners stated that they were unaware, 36 (58.06%) of them answered it incorrectly while only 4 (6.45%) were right. More than half of the subjects 34 (54.84%) said that they did not know the calculation for the dosage of RIG to be administered. Among the 28 (45.16%) medical practitioners who stated that they knew the calculation only 8 (12.90%) knew the correct method as per WHO guidelines. A whopping 38 (61.29%) of doctors believed that HRIG offered more benefits with respect to immunization than ERIG.

When asked what the sites of administration of RIG, 40 (64.51%) answered around the wound and 6 (9.68%) of them stated the gluteal region. Forty (64.51%) of them knew that RIG was administered around the wound.

Only 6 (9.68%) of them were aware that in case of a previous dog bite and full immunization history, only doses 0 and 3 of ARV should be given while RIG should be avoided. Two (3.22%) doctors stated that only RIG should be withheld while the full course of ARV should be administered. 60 (96.77%) of them stated that the biting animal should be observed. 36 (58.06%) doctors stated that the period of observation was for 10 days. Though WHO guidelines say ARV should be started as early as possible and RIG can be administered as late as up to 7 days following the bite, only 8 (12.90%) and 2 (3.22%) were aware of this respectively. The other answers ranged from 1 to 30 days.

The modified 3-point Likert scale was applied for attitude and it was observed that a majority of them disagreed with the notion that the biting animal should be killed and that the ARV may lead to serious adverse reaction, and agreed that IM (intramuscular) injection should not be administered in the gluteal region, and that Rabies PEP is not indicated if the biting animal is fully vaccinated (Table 4).

Table-4. Attitude based Questions

Sl. No.	Questions	Agree	Can't say	Disagree
1.	The biting animal should be killed	10 (16.13%)	14 (22.58%)	38 (61.29%)
2.	Intramuscular ARV should not be given to the gluteal region	38 (61.29%)	6 (9.68%)	18 (29.03%)
3.	ARV may lead to serious adverse effects.	10 (16.13%)	16 (25.81%)	36 (58.06%)
4.	Rabies PEP is not indicated if the biting animal is fully vaccinated.	34 (54.84%)	10 (16.13%)	18 (29.03%)
5.	People do not opt for ARV/RIG administration as it is costly	24 (38.71%)	14 (22.58%)	24 (38.71%)

Discussion

What we learn from this study is that despite there being a significant number of animal bite cases in the city, and therefore, a need for accurate knowledge of the categorization of the wounds, the first aid to be given, and the specific details of the vaccine and immunoglobulin administration,

medical practitioners lacked knowledge about it. Even those doctors who have, or continue to come in contact with quite a number of cases of animal bites, lack the meticulous knowledge that is required to treat such cases. Most medical professionals had a general working knowledge of PEP that glosses over the specifics. Also, many

of these practicing professionals had not updated their knowledge regarding the latest WHO guidelines and sometimes still quote and practice the obsolete methods. Some of the medical professionals seem to lack basic knowledge about the disease such as whether it is curable or not and whether it can be transmitted by scratches and licks.

Therefore, as seen from the results of this study, most practicing physicians lack knowledge about the WHO-advocated guidelines, starting right from the immediate aid of the wound, categorization of wounds, calculation of the required dosage and administration of RIG, ARV and whether to suture the wound or not.

This result is in keeping with those from another study that showed that the medical students included in the study had poor knowledge about the modes of transmission, animals that can transmit rabies, RIG and the number of ARV doses (6). Similar conclusions were also derived from another study involving AYUSH (Ayurvedic, Yoga, Unani, Siddha and Homoeopathy) doctors. (7).

This lack of knowledge can be seriously detrimental to the patients as there is a significant danger that the physician does not recognize some of the cases at risk. Even if recognized, evidence-based methods of prophylaxis are not being implemented. In combination, these two may lead to increased risk of progression of a case to full-blown rabies.

Keeping that in mind, it is an unarguable fact that more training and awareness programmes to increase awareness on rabies and its post-exposure prophylaxis among practicing physicians are required. In fact, 10 (16.12%) of the professionals themselves suggested the same. Other suggestions that were given included reducing the cost of PEP especially RIG and reducing the number of doses of PEP required which would ensure increased patient compliance. Continuing medical education programmes (CMEs) and on-site demonstrations that actively involve the professionals might help in this regard.

Larger studies with more number of people, from diverse health care levels, preferably from different geographic areas and states are required to explore awareness among physicians of other regions and specialties and make the conclusions more definitive.

Conclusion

Knowledge and attitude regarding rabies prevention among practicing physicians in Bengaluru City was found to be not very satisfactory. It is the need of the hour to train, refresh and update medical practitioners on prevention measures for rabies and help them adapt to the WHO guidelines on rabies prevention.

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