Title: EVALUATION OF ANTI RABIES CLINICS IN THE RURAL FIELD PRACTICE AREA OF A MEDICAL COLLEGE IN BENGALURU

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Keywords Anti Rabies clinics, Evaluation

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Original Article:

EVALUATION OF ANTI RABIES CLINICS IN THE RURAL FIELD PRACTICE AREA OF A MEDICAL COLLEGE IN BENGALURU.

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ABSTRACT:

Background: Rabies is a viral zoonotic disease responsible for an estimated 59,000 human deaths.
Objectives: To evaluate Anti Rabies Clinics in the rural field practice area of a Medical college near Bengaluru and to assess the cold chain facilities available for rabies immunobiologicals.
Materials and Methods: This descriptive cross sectional study on the Anti Rabies Clinics (ARC) was done during January to March, 2018 in the field practice area of the Rural Health Training Centre of Kempegowda Institute of Medical Sciences, Bengaluru. A total of 15 ARCs were visited keeping the feasibility and permission given by the centers.
Results: A total of 5 government, 3 Private allopathic health care and 7 AYUSH health care Anti-Rabies Centres (ARC) were visited.3 ARCs had a separate area for wound washing. Antiseptics like betadine were used to clean the wound at all ARCs following wound wash. All the 15 (100.0%) ARCs administered rabies vaccines. At the PHCs, only the first dose was given at the ARC and for the remaining doses of ARV, they were referred to a higher centre. None of the 15(100.0%) ARCs had rabies immunoglobulin available and no bite victim was administered RIG.
Conclusion: The administration of rabies vaccination was satisfactory in the government and private ARCs but not in the AYUSH clinics. RIG infiltration was non existant at all the anti rabies clinics visited.

Key Words : Anti-Rabies Clinies, Evaluetion.

INTRODUCTION:

Rabies is a viral zoonotic disease responsible for an estimated 59,000 human deaths and over 3.7 million disability-adjusted life years (DALYs) lost every year.[1] Rabies deaths occur mainly in those who cannot access timely and effective PEP.[1] Thorough wound washing with soap or detergent and water and/or virucidal agents reduces the viral inoculum at the wound site. Prompt PEP following severe exposures is 100% effective in preventing rabies.[2] WHO has endorsed a target of Zero Human Rabies Deaths from dog-transmitted rabies by 2030 (Zero by 30).[3]

Common constraints for the control of rabies in the countries of Asia include inadequate resources; lack of political commitment, limited accessibility to modern rabies vaccine and supply problems, and the existence of myths and religious issues. [4] In India, rabies continues to be a neglected tropical disease. The disease mainly affects the rural population who do not have access to rabies immunobiologicals. However, a lot has changed since the millennium including increased availability and accessibility to rabies immunobiologicals. India needs to drastically reduce its burden of human rabies. Hence, in July 2016, at the national conference of rabies organized by Association for Prevention and Control of Rabies in India (APCRI), Bengaluru, it was resolved to support and work for accomplishing the global goal by ensuring a dog-mediated human rabies-free India by 2030.[5] One of the means to achieve this goal is through ensuring availability and accessibility of rabies immunobiologicals to the peripheral health care provider i.e. Primary Health Centre (PHC). Hence, the present study has been conducted with the following objectives: 1.To evaluate ARCs in the rural field practice area of a Medical college near Bengaluru. 2. To assess the cold chain facilities available for rabies immunobiologicals.

Materials and Methods:

This descriptive cross sectional study on the Anti Rabies Clinics (ARC) was done during January to March, 2018 in the rural field practice area of a Medical college near Bengaluru. A total of 15 ARCs including government, private allopathic clinics and AYUSH clinics were visited keeping the feasibility and permission given by the centers. Anti rabies clinic was defined for the purpose of study as a health care facility/ clinic (Allopathy & AYUSH) providing rabies vaccination or rabies Immunoglobulin. A pre tested structured checklist was used for collection of information on the type, location, facilities, staff, cold chain, rabies vaccination and rabies immunoglobulin, etc. The ARCs which consented to participate were included in the study. The data was entered in excel sheet and simple percentages and proportions were measured.

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RESULTS:

Availability and accessibility of Anti Rabies Clinic: The ARCs were located about 15 to 25 kms from the medical college. They catered to a population of about 1,50,000 lakhs. Agriculture was the predominant occupation of the people in the villages and off late there is demographic transition taking place with villages being surrounded by residential layouts for urban population. A total of 5(33.3%) Government and 3(20.0%) Private Allopathic and 7(46.7%) AYUSH Anti Rabies Clinics (ARCs) were visited. In the government, 4(80.0%) of the ARCs visited were Primary Health Centers (PHC) and 1(20.0%) was a Community Health Center (CHC).All the 5(100.0%) ARCs were located within the existing setup of PHCs and CHC. All the 5 (100.0%) ARCs had easy access to the main roads and transportation (Table-1). The average distance of the villages to the PHC was 5 Kilometers. In the private sector, 1(33.3%) was a private medical college and 2(66.7%) were private clinics. There were 7 AYUSH Clinics. All 5 ARCs in the government had a medical officer and a staff nurse who attended to the animal bite cases. A Pharmacist was present in all the 5 centres and was responsible for the storage of the rabies vaccines. In the Medical College, vaccines were administered by the Emergency Medicine Department. In the remaining 2 Private ARCs the private practitioner attended to the cases and administered ARV. In the AYUSH set up, the BHMS doctors attended to the dog bite cases and administered ARV.

Wound wash facility: There was continuous water supply at all 5(100%) ARCs of the government, 3(60%) ARCs had a separate area for wound washing. Antiseptics like povidone iodine were used to clean the wound at all 15(100%) ARCs following wound wash. There was a separate area for wound washing in the medical college but no such facility was available in the ARCs in the private allopathic clinic or the AYUSH clinics. 2 (13.3%) ARCs i.e. 1(50%) CHC and 1(50%) Medical college were providing 24/7services.

Rabies vaccination: All the 15(100.0%) ARCs administered rabies vaccines. At the PHCs, only the first dose was given at the ARC and for the remaining 4 doses, the bite victims were referred to a higher Center, usually in Bengaluru for ARV. Intramuscular (IM) schedule was followed at the 4(80%) PHCs, as the number of cases in a month were low for opening of a vial for intradermal (ID) schedule. In the CHC, the ID schedule of vaccination was practiced and all 4 doses of the ID vaccines were given there. In the PHC, ARV was administered free of cost where as in the CHC, they had charged about Rs.100/dose. In the private sector and in medical college the amount ranged from Rs.50-100/dose. In the AYUSH clinics, the ARVs were given at a cost of Rs.20-30/dose. Abhayrab and Indirab were the vaccines available and administered in the Government sector. In the private sector and AYUSH clinics, the commonly used brands were Verorab and Rabipur. IM schedule was followed in 2(66.7%) of the private clinics and ID schedule in 1(33.3%).

Table 1 :
Distribution of the ARC Clinics in the study area

Sl. No	Anti Rabies Clinic	Characteristics		Government (n=5)	Private (n=3)	AYUSH (n=7)	Total (n=15)
1	Location	Within the health facility/ clinic		5(100.00)	3(100.00)	7(100.00)	15(100.00)
2	Staff of ARCs	Doctor		5(100.00)	3(100.00)	7(100.00)	15(100.00)
		Staff nurse		5(100.00)	1(33.30)	1(14.30)	7(46.70)
		Pharmacist		5(100.00)	2(66.70)	1(14.30)	8(53.30)
3	Facilities	Wound wash facility		3(60.00)	1(33.30)	-	4(26.70)
		present Anti septics applied		5(100.00)	3(100.00)	7(100.00)	15 (100.00)
4	Vaccines Available	Brands used		Abhayrab / Indirab/ Verorab / Rabipur/ Vaxirab N / Zoonovac -V			
		Cost per dose	Free	4(80.00)	-	-	4(26.70)
			20 INR	-	-	4(57.10)	4(26.70)
			50 INR	-	2(66.70)	3(42.90)	5(33.30)
			100INR	1(20.00)	1(33.30)	-	2(13.30)
5	Route of administration	IM		4(80.00)	2(66.70)	6(85.70)	12(80.00)
		ID		1(20.00)	1(33.30)	-	2(13.30)
		S/C		-	-	1(14.30)	1(6.70)

6	Site of administration**	Deltoid	5(100.00)	3(100.00)	7(100.00)	15(100.00)
		Antero-lateral thigh	-	-	2(28.60)	2(13.30)
		Buttock	-	-	2(28.60)	2(13.30)
		Abdomen	-	-	1(33.30)	1(6.70)
7	RIG availability	Available and administered	-	-	-	-
8	Cold chain	UPS	5(100.00)	2(66.70)	-	7(46.70)
		Domestic refrigerator	5(100.00)	2(66.70)	1(14.30)	8(53.30)
		ILR	5(100.00)	-	-	5(33.30)
		DF	5(100.00)	-	-	5(33.30)
		Temperature Log	5(100.00)	2(66.70)	-	7(46.70)

***Figures in parenthesis indicate percentages** **Multiple response

7(100%) AYUSH clinics administered the vaccine intramuscularly in the deltoid among which 2(28.6) also administered it in the gluteal region and anterolateral thigh. 1(33.3) AYUSH practitioner also administered the vaccine subcutaneously in the abdomen.

In the Government ARCs, the stock outs were reported only occasionally. On an average in the CHC, 15- 17 new cases were reported per month. In the allopathic health care clinic 4-5 new cases per month and 1-2 cases per month in the AYUSH clinics.

Rabies Immunoglobulin: None of the 15(100.0%) ARCs had rabies immunoglobulin available and no bite victim was administered RIG. They were all referred to ARCs in Bengaluru.

Cold chain for Rabies Immunobiologicals: 7 (46.7%) ARCs (5 government, 1 medical college and 1 private allopathic clinic) had UPS back up for cold chain. For the cold chain in the Government ARCs, a domestic refrigerator, ice lined refrigerator (ILR) and Deep Freezer (DF) was present at all 5(100%) ARCs, which were placed away from the sun light, plugged into to a power source and a temperature reading denice was present for the ILR and DF. Temperature log was maintained for the cold chain, but in 2 ARCs no separate temperature log was maintained for the domestic refrigerator. In the medical college, rabies vaccine was stored in the pharmacy (domestic refrigerator) and UPS back up was available 24/7. 1(33.3%) private practitioner prescribed ARV from the pharmacy and administered the vaccines while 1(33.3%) private practitioner had a pharmacy of his own where the ARV was stored in a domestic refrigerator and cold chain was maintained. 6(85.7%) AYUSH practitioners prescribed ARVs to be purchased from an allopathic pharmacy while 1(14.3%) had his own pharmacy where he stored rabies vaccine in the domestic refrigerator but no UPS back up or cold chain was maintained.

DISCUSSION:

In the present study, it was observed that in the rural area ARCs are available in government sector, where they are reasonably equipped with facilities like cold chain, staff for rabies vaccination, easy accessibility to villages and UPS power back up. This was mainly due to the availability of already established infrastructure from the Universal Immunization Program. This is contrary to the general assumption that rural infrastructure is weak.The private clinicians are usually general physicians and have basic information about vaccine and do not administer RIG. It was alarming to observe that AYUSH practitioners (BHMS doctors) having inadequate knowledge about the route, site, dose and schedule for administering modern ARV were doing so on regular basis. However, a significant number of bite victims are visiting the AYUSH practitioners for anti rabies treatment.

In the present study, majority of the ARCs had facilities for wound washing, even though it was not a separate room. The WHO recommends that for categories II and III bites, thorough wound washing and flushing with soap or detergent should be done immediately, or as soon as possible. Depending on the characteristic of the wound, antibiotics, analgesics and a tetanus vaccination may be indicated.[6]

In a study done in urban Bengaluru,100% and 89% of subjects were administered anti-rabies vaccine in the secondary care and tertiary care hospital respectively.[7]In the present study, rabies vaccination schedules were not followed in any of the PHCs i.e. only one dose was administered, hence, there is a need to ensure for full course of rabies vaccination in the PHCs. In a study from Bengaluru, 69.2% subjects were administered rabies vaccine through ID route in secondary hospital and 46.1% were administered rabies vaccine through IM route in tertiary hospital in discordance to the present study, where ID route administration was not followed in any of the PHCs.[6] It would be more economical if single dose ID route vials are manufactured and made available at the PHC, so as

to ensure better availability and compliance.

However when it came to RIG administration, none of the centers were practicing administration of RIG and RIG was not available in any of the ARCs. This is a cause of concern as majority of the rabies deaths reported in India are from the rural areas, affecting the marginalized sections of the society and children. In a study done in urban Bengaluru, only 21.5% of category-III bites were administered rabies immunoglobulin in secondary care hospital whereas 96% of category-III bites were administered rabies immunoglobulin in the tertiary care hospital.[7]RIG administration is recommended after category III exposures of individuals who have not previously been vaccinated against rabies.[6]The National Centre for Disease Control, Government of India guidelines states that rabies can be prevented by administration of appropriate PEP and should be made available at all levels of the health care systems.[8]

Workshops can be conducted once in 6 months to update the medical officers and private practitioners on the methods of administration of ARV and RIG, so that complete protection against rabies is available to the people more easily.

Conclusion: The administration of rabies vaccination was satisfactory in the government and private ARCs but not in the AYUSH clinics. RIG infiltration was non existant at all the anti rabies clinics visited.

Limitations: The study could not cover all the private ARCs because of feasibility issues. A larger study covering the ARC at the different states is recommended for generalization of the study results.

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