

A cluster survey report of mass drug administration drive 2021 for elimination of lymphatic filariasis in an endemic district of Telangana

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Abstract

Background: Mass drug administration (MDA) means once-in-a-year administration of diethyl carbamazine (DEC) and albendazole tablet to all people (excluding children under 2 years, pregnant women and severely ill persons) in identified endemic areas. It aims at cessation of transmission of lymphatic filariasis. MDA Drive 2021 was implemented in 14 endemic districts of Telangana state and this study is part of the evaluation report of Sangareddy District,

Methodology: A community based cross sectional survey was conducted in rural area of endemic district of Telangana State. Two stage cluster sampling technique was used to select 80 clusters from randomly selected areas, all the family members of identified clusters were surveyed to find the eligible population. They were interviewed using validated questionnaire. Data obtained was analyzed to evaluate the effectiveness of MDA drive

2021 and to assess the possible reasons of noncompliance in study area.

Results: Among the surveyed population, total 1240 subjects found eligible. The data collected showed that the coverage of MDA Drive 2021 for filariasis in study area was 88.2% and compliance for the same was 79.9%. Almost 12% population was deprived from campaign. There was coverage-compliance gap. Around 29.52% of covered population did not consume given drugs. The most common reason for noncompliance was ‘patient thinking not having filariasis.’ Overall awareness about the disease lymphatic filariasis was good in the community.

Conclusion: In surveyed community coverage was adequate but compliance was less. The compliance has to be improved in order to eliminate filariasis from the country and drug delivery system should be strengthened to achieve 100% coverage. IEC activities should be

strengthened in preparatory phase of MDA drive to bring out BCC.

Keywords: MDA, Compliance, Coverage, cluster survey, Lymphatic Filariasis.

Introduction

Lymphatic filariasis (LF) infection is caused by the filariae, (*Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*), and seen in tropical region¹. Lymphatic filariasis commonly known as elephantiasis. It is a neglected tropical disease. Infection to humans occurs through mosquito bite. In an endemic area, usually infection developed in childhood. This early exposure leads to hidden impairment of the lymphatic system. The painful and disfiguring manifestations of the disease are Lymphoedema, elephantiasis and scrotal swelling. These manifestations can lead to permanent disability, stigma and poverty.²

In the world, around 120 million people are currently infected with filariasis, about 40 million disfigured and incapacitated by the disease. Globally, an estimated 25 million men suffer with genital disease and over 15 million people are afflicted with lymphoedema³ In India, there are 257 endemic districts for filariasis (in 21 states/UTs).⁴ MDA started as mass campaign from the year 2004 in our country. Initially it was started with single dose of DEC only. In the year 2007 DEC + Albendazole co-administration was started. From the year 2018, Triple Drug Therapy (IDA) i.e., DEC + Albendazole + Ivermectin was launched in five selected districts initially. Since elimination target is approaching, all the left-out districts which were yet to achieve elimination were brought under MDA.⁵

The World Health Organization recently proposed 2030 as the new target year for elimination of lymphatic filariasis (LF) as a public health problem.⁶ The National Health Policy (2002) has set the goal of Elimination of

Lymphatic Filariasis in India by 2015. Later it was extended to 2021.⁷ In Telangana, out of the 31, the lymphatic filariasis disease is endemic in 14 districts. In the year 2020, the state recorded 66,394 lymphoedema and 1,329 hydrocele cases across the endemic districts⁸.

The state government has undertaken a Mass Drug Administration (MDA Drive) campaign in order to eliminate filariasis. Sangareddy district is one of the 14 endemic districts of Telangana where the MDA drive for Filariasis was launched. The present study was conducted to evaluate the mass drug administration drive in some rural areas of the district.

Material And Methods

The present survey was proposed to conduct in the field practice area of MNRMCH after getting ethical clearance from Institutional Ethics Committee. Study conducted with the Aim to assess the coverage and compliance of MDA drive for filariasis in endemic areas of Sangareddy district.

Objectives

1. To estimate coverage and compliance of MDA drive 2021 for the elimination of lymphatic filariasis and 2. To assess the reasons for noncompliance to the drugs.

Study Design: A cluster survey.

Study Area: Rural area of Sangareddy district.

Sampling Technique: In this study two stage cluster sampling was used. Selection of clusters and size of population in each cluster was done according to guidelines issued by ministry of health and family welfare government of India⁹. Four rural clusters were selected as per these guidelines. In each block a list of all villages was prepared. One village was selected randomly and from each area 80 family clusters were selected; all the members of the family were included in the survey. The clusters namely Jogi pet, Rudra ram,

Peddapur and Sulthanpur identified from rural part of the Sangareddy district

The first house was selected by simple random sampling and the remaining houses were selected continuously from that first house. Adjacent house was selected if the visited house was locked or refused to respond.

The cluster, already surveyed in previous years MDA evaluation, was excluded from the study. The pregnant and lactating women, children below two years of age and seriously ill persons were excluded from the study.

Data collection

Each team for data collection included three interns and one faculty member from community Medicine department. A pretested and predesigned validated questionnaire was used to collect data. The details of family members, demographic characteristics and information regarding MDA drive drugs, consumption of drugs and the reasons for non-consumption was collected in a semi structured questionnaire by house-to-house visit.

Data analysis

Data was entered and analyzed using MS excel. Percentages and proportions were used for comparison.

Results

The survey conducted in rural area of Sangareddy district, where the MDA drive was implemented, namely Jogi pet, Rudra ram, Sultanpur and Peddapur. All families from selected clusters were surveyed. Total 1266 study subjects were surveyed, out of which 1240 found to be eligible study subjects after applying exclusion criteria.

The proportion of population in these areas with age and sex wise distribution is given in table no.1. In the study population 51.5 % respondents were male and 48.5% respondents were female. In the surveyed population, 16 individuals (1.26%) were below 2 years of age and

83.6% population is above 15 years of age. About 10 individuals were pregnant ladies (0.78%) and total 1240 (97.94%) individuals were available for MDA. As per Table no 2, Sultanpur was having more eligible population (29.19%) and the coverage rate was also more 90.05% as compared to others. Table no 3 gives compliance status of the study area. Out of 1240 study subjects 88.2% population received drugs and 79.9% subjects could recall that they had actually consumed drugs. Coverage and compliance were better in Sultanpur area compared to other areas. Table no 4 gives distribution of population as per the reasons given for noncompliance by the study subjects. 55.9% respondents have given reason that they thought as they were not suffering from the disease so consuming drugs was not necessary. Reservation on drug distributors (24.3%) and fear of side effects (9.91%) Fear for side effects were the next common responses given by respondent. Few of them have reported 'lack of information' (4.5%) and forget to take drugs (3.6%).

Discussion

The operational guidelines given by government of India for elimination of lymphatic filariasis stated that for elimination of lymphatic filariasis from our country needs 85% or more of coverage rate of MDA & its sustenance for at least five years.⁹ The mass drug administration drive done in various endemic parts of India showed varied coverage of population. Many of the studies have been published in this regard. A systematic review published by Babu BV et al¹⁰ had shown varied coverage ranging from 48.8 % to 98.8%.

In present study the study population showed 88.2% of the coverage for MDA drive in July 2021. Similar findings were reported in study conducted in Kalburgi district by Biradar MK et al.¹¹ where coverage rate was of 80.7%. In other studies conducted in Bidar district by

Mane VP¹² and Gururaj N¹³ coverage reported was 82.1% and 73.1% respectively. These districts are neighboring areas of Karnataka state and have many geographical and social similarities which impact the healthcare behavior of community. In Raichur district, the study conducted by Ananya Lakshmi and Ranganath BG¹⁴, the overall coverage was 92.7%.

On the contrary, Parande et al.¹⁵ observed 63.7% coverage of MDA in Solapur district of Maharashtra where only 23.3% coverage was reported from urban slum area. In Studies conducted by Patel PK¹⁶ and Havale NG¹⁷ in backward districts like Bagalkot and Yadgiri the coverage reported was 78.6% and 56.1%.

Studies conducted in other states like West Bengal by Dr. Louis Tirkey¹⁸ and Ghosh S¹⁹ coverage was (95% 18) and 98.8% respectively. In Odisha it was 99% as reported in study conducted by Hussain, M.A. et al²⁰ and in UP, (51.7% 20) coverage reported by Barman SK²¹

The mass drug distribution has got many logistics issues in rural areas apart from these fear about the current pandemic of Covid19 and recall bias could be the possible reasons for low coverage of Mass drug administration drive in our study.

The overall compliance for drugs in our study was 79.89% which is lower as compared to the studies conducted by Biradar MK and Holy Achi s.et al¹¹ (86.9%), Ananya Lakshmi and Ranganath¹⁴ (91.3%), Havale NG¹⁷ 86.35% in Gulbarga district while similar compliance rate was reported in the studies conducted by Prakash patel¹² (78.6%), Mane V.P.¹² (82.1%), Gururaj N A et al¹³ (75.1%), Havale NG¹⁷ 75.78% in Yadgiri district and Waseem A²²(79.21%) . In studies conducted by Louis T et al¹⁸ in West Bengal and by Hussain, M.A. et al²⁰ in Odisha compliance rate was 71. 6% and 29.5% respectively. However, the study conducted in West Bengal by Ghosh S et al ¹⁹ reported 94.8% compliance

while 36.9% compliance observed in Bundelkhand, UP as per the study conducted by Barman SK et al²¹. Study done by Z. T Nujum²³ in Thiruvananthapuram district of Kerala reported 39.5% of compliance where coverage was 53.2%. The coverage – compliance gap of MDA drive has been observed in almost all studies, similar findings are also observed in our study.

Among the reasons for noncompliance in our study, the commonest was ‘patient thinking not having filariasis’. While in most of the studies^{12,18,20} ‘fear of side effects or adverse reaction was the most cited reason for noncompliance. In a study done by Barman SK²¹ the most common reasons for non-swallowing drugs was ‘not sick’ which is similar to our study.

Summary & Conclusion

This assessment of Mass Drug Administration Drive 2021, conducted in rural part of endemic district of Telangana state, showed overall coverage of 88.26% while compliance rate was 79.9%. Though the coverage of MDA Drive 2021 was more than the required one. It requires more than 65% coverage for elimination of lymphatic filariasis which should be sustained for 5 to 6 annual rounds²⁴. One of the reasons for low coverage could be the fear of current pandemic of Covid19. The logistic and administrative reasons of low coverage also need to be investigated. Almost 12% population had been deprived from the campaign.

The main reason given for noncompliance was ‘patient thinking not having lymphatic filariasis’ (55.9%). It has been observed that Mass Drug Administration drive restricted mainly to the distribution of tablets. Consumption of drug is a major issue in such drives. For the better compliance health education and Behaviour Change Communication is essential. It can be achieved by intensifying the IEC activities in preparatory phase. Community should be sensitized about the risk and

benefits of drugs to improve compliance. Involvement of community leaders, effective management of side effects and morbidity will definitely help to address issues of noncompliance. For better coverage logistic and administrative reasons should be actively identified and corrected. Elimination of lymphatic filariasis is definitely possible with rigorously trained and motivated health workers, improved drug delivery system and better logistics in Mass Drug Administration drive.

Limitations

This study is a community-based survey conducted in rural area for evaluation of mass drug administration drive. This highlights the reasons of noncompliance from community perspective. The coverage- compliance gap has got some logistic and administrative reasons too. These issues should be identified by assessing the system.

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Legend Tables

Table 1: Age & sex wise distribution of surveyed population in respective areas.

AGE	AREA											GT (%)	
	JOGIPET		TOTAL (%)	RUDRARAM		TOTAL(%)	SULTHANPUR		TOTAL (%)	PEDDAPUR			TOTAL (%)
	M(%)	F (%)		M(%)	F(%)		M(%)	F (%)		M (%)	F (%)		
0-2	4(2.2)	6(5)	10(3.31)	2(1.15)	0(0)	2(0.63)	0(0)	0(0)	0(0)	2(1.27)	2(1.61)	4(1.4)	16(1.26)
02-05	2(1.1)	2(1.67)	4(1.32)	2(1.15)	6(4.17)	8(2.52)	2(1.27)	0(0)	2(0.55)	6(3.8)	2(1.61)	8(2.8)	22(1.74)
05-15	16(8.79)	24(20)	40(13.25)	20(11.5)	20(13.9)	40(12.6)	30(19)	38(18.4)	68(18.7)	10(6.33)	12(9.68)	22(7.8)	170(13.4)
>=15	160(87.9)	88(73.3)	248(82.12)	150(86.2)	118(81.9)	268(84.3)	126(79.9)	168(81.6)	294(80.8)	140(88.6)	108(87.1)	248(88)	1058(83.6)
TOTAL	182(100)	120(100)	302(100)	174(100)	144(100)	318(100)	158(100)	206(100)	364(100)	158(100)	124(100)	282(100)	1266(100)
%			23.85			25.1			28.8			22	

Table 2: Area wise coverage of MDA dive 2021 in study population

	Area				Total (%)
	Jogi pet	Rudra ram	Sulthanpur	Peddapur	
Total eligible for mda	290	312	362	276	1240 (100)
Eligible who were given drugs	250	280	326	238	1094 (88.2)
Eligible who were not given drugs	40	32	36	38	146 (11.8)
Coverage with drugs	86.2069	89.74359	90.05525	86.231884	88.22581

Table 3: Area wise compliance in study population

Consumption status of population	Area				Total	%
	Jogi pet	Rudra ram	Sulthanpur	Peddapur		
Received drugs	250	280	326	238	1094	88.2
Consumed drugs	198	250	252	174	874	79.9

Table 4: Distribution of study population as per reasons given for noncompliance

Reason for noncompliance	Area				Total*	%
	Jogi pet	Rudra ram	Sulthanpur	Peddapur		
Under treatment for some other disease	2	0	0	2	4	1.8
Fear for side effects	0	4	2	16	22	9.91
Reservation on drug distributor	16	2	26	10	54	24.3
Patient thinking not having lymphatic filariasis	30	20	40	34	124	55.9
Forget to take drugs	2	0	4	2	8	3.6
Lack of information	2	4	2	2	10	4.5

*Multiple responses.