

Evaluation of Mass Drug Administration for Lymphatic Filariasis in Sangareddy District

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Abstract:

Background

Lymphatic filariasis is targeted for elimination in India through mass drug administration (MDA) with diethylcarbamazine (DEC) combined with albendazole (ABZ). For the strategy to be effective, >85% of those living in endemic areas must be covered by MDA.

Methods

A sample 40 family clusters each from one urban areas and 40 each from three rural areas, both male and female, aged two years or above – were selected interviewed using a semi-structured questionnaire.

Results

In this study about 79.13% of the study participants received DEC and ABZ tablets during MDA, of which 97% of participants consumed the drugs. The cause of non-compliance was mostly due to fear of side effects,

Conclusion

The compliance has to be improved in order to eliminate filaria from the country and the hurdles in achieving these goals needs to be addressed as a primary concerns which are health education, managing side effects and logistics

Keywords: MDA, DEC, ABZ, Compliance

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I. Introduction

Lymphatic filariasis (LF) is caused by infection with the filariae *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori* (*Brugia* spp.) and this disease occurs in tropical region. (1). The filarial infection can present with fever, local swelling, lymphangitis and tropical pulmonary eosinophilia syndrome or it can be asymptomatic. Chronic complications with filarial infection are elephantiasis of the limbs (mostly lower limbs), hydrocele, chyluria and damage to the lymphatic system (1, 2).

MAGNITUDE OF PUBLIC HEALTH PROBLEM: -

In 72 countries around 120 million people are affected with lymphatic filariasis throughout the tropics and sub-tropics of Asia, Africa, the Western Pacific, and parts of the Caribbean and South America.³ In India, an estimate of 650 million people are at risk of Lymphatic Filariasis in 257 endemic district. Morbidity surveys up to 2019 revealed that 9.21 lakh cases of Lymphedema and 3.96 lakh cases of Hydrocele in the country. Yearly Mass Drug Administration programme is being undertaken since 2004, using DEC tablets. Since 2007 new strategy to include Albendazole along with DEC has been implemented.⁴ Lymphatic filariasis (LF) is one of the six infectious diseases identified by the International Task Force for Disease Eradication as “eradicable” or “potentially eradicable.”⁵

GOAL: - In 1997, WHO and its Member States made a commitment to eliminate Lymphatic Filariasis (LF) as public health problem by 2020 through World Health Assembly Resolution WHA 50.29. The World Health Organization recently proposed 2030 as the new target year for elimination of lymphatic filariasis (LF) as a public health problem.²³ The National Health Policy (2002) has set the goal of Elimination of Lymphatic Filariasis in India by 2015. Later extended to 2021.⁶

STRATEGY: To interrupt the disease transmission by mass administration of two drugs (Single dose of Diethyl Carbamazine 6mg/kg and Albendazole-400mg) regimen which is followed annually from last 13 years, by house to house visits, is being followed this year also.

II. Objectives

Major objectives

1. To estimate coverage of population under MDA for the elimination of lymphatic filariasis
2. To establish the effectively protected population who have actually consumed the drugs under MDA.

Minor objective

1. To the know the reasons for noncompliance of drugs by individuals.
2. To assess the performance of drug distributors.
3. To assess the IEC activity for the enhancement of compliance by the community.

III. Material And Methods

STUDY DESIGN AND SAMPLING TECHNIQUE

A community-based cross-sectional study was conducted for the evaluation of MDA by a household survey in four selected clusters. 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 India. Three rural and one urban cluster was selected as per these guidelines. Multistage sampling was used. A list of all the villages in each block, as well as the wards in each urban administrative unit, was prepared and one village/ward was selected randomly from each block for the selection of the study respondents. The Urban cluster is Sangareddy and 3 rural clusters i.e. Kondapur, Pulkal, Patancheru villages were selected for the evaluation. The first house was selected randomly, and the remaining houses were selected continuously from that first house. If the house was locked then the adjacent house was selected. From each urban and rural area 40 family clusters were selected, all the members of the family were included in the survey. Due precautions were taken not to include the already surveyed clusters in the previous year's annual MDA surveys

Four teams consisting of faculty members of department of community medicine and three house surgeons in each team were formed and a briefing session was conducted regarding how to carry out the evaluation survey as per guidelines.

A pretested and predesign questionnaire is used to collect data with details of family members, demographic characteristics and information regarding distribution of MDA with dosage, whether consumed or not and if not consumed reasons for non-consumption. requisite material were provided along with the transport facility separately for each team.

DATA COLLECTION

Data was collected by the investigators in the prescribed format from the selected clusters. Data was collected by house to house visit following strict covid protocols as per government guidelines. Data was collected on 31/08/2020. Data was tabulated, analyzed and conclusions are drawn as shown in the following tables.

IV. Results

Table 1: Areas selected for survey purpose in Sangareddy district.

AREA	Population surveyed	Percentage (%)
Patancheru	234	22.7
Sangareddy	220	21.37
Kondapur	270	26.23
Pulkal	305	29.64
Total	1029	100

In the survey for evaluation of MDA (lymphatic filariasis) 2020, 1029 individuals 809(78.6%) belonging to rural area and 220 (21.3%) individuals belonging to urban area of Sangareddy district were included.

Table 2: Gender wise distribution of study population

Gender	AREA				Total(%)
	Patancheru	Sangareddy	Kondapur	Pulkal	
Male	121	108	139	155	523(50.82)
Female	113	112	131	150	506(49.17)
Total	234	220	270	305	1029

In the study population 50.82 % respondents were males and 49.17% respondents were females.

Table 3: Distribution of population according to age

Age	AREA				Total	%
	Patancheru	Sangareddy	Kondapur	Pulkal		
0-2	3	4	3	5	15	1.45
2-5	21	5	4	7	37	3.59
5-15	72	57	69	82	280	27.21
>=15	138	154	194	211	697	67.73
Total	234	220	270	305	1029	100

It is evident from the above table, 15 individuals (1.45%) of study population are below 2 years of age and 67.73% population is above 15 years of age. 6 individuals were pregnant (0.58), 1008 (97.95) individuals are available for MDA.

Table 4: Coverage of study population with Drugs.

	AREA				
	Patancheru	Sangareddy	Kondapur	Pulkal	Total (%)
Total eligible for MDA	230	214	265	299	1008(97.95)
Eligible who were given drugs	182	175	206	238	801(79.46)
Eligible who were not given drugs	48	39	59	61	207(20.53)
Coverage with drugs	79.13	81.77	77.73	79.59	79.46%

The coverage of population with anti-parasitic drugs was found to be 79.13% and 21.87 % of study population was not covered by dd.

Table 5: Drug compliance and non-compliance

Consumotion status of population	Area				Total (%)
	Patancheru	Sangareddy	Kondapur	Pulkal	
Received drugs	182	175	206	238	79.46%
Consumed drugs	178	167	202	236	783 (97.75)

The drug compliance was found to be 97.75% and 2.25% non-compliance.

Table 6: Reason for non-compliance

Reasons for noncompliance	Area				Total (%)
	Patancheru	Sangareddy	Kondapur	Pulkal	
Under treatment for some other disease	1	0	0	0	1
Fear of side effects	0	2	0	5	7
Reservation on drug distributor	1	1	2	3	7
Patient thinking Not having lymphatic filariasis	1	1	1	2	5
Total	3	4	3	10	20

The main reason for noncompliance was fear of side effects and Reservation on drug distribution.

V. Discussion

1. Coverage & compliance

As per Government of India's the operational guidelines on elimination of lymphatic filariasis, coverage rate of 85% and above, which is sustained for a period of five years, is required for elimination of lymphatic filariasis in india.⁷ In our study the **coverage** of population with anti-parasitic drugs was found to be 79.13% which is similar to the study done by Praveen Kulkarni⁸ et al. with coverage rate in Vijayapura district of 80.4%. Parande *et al.*⁹ observed coverage of MDA as low as 23% in slum areas of Solapur district of Mahatashtra which is different from our study. The possible reasons for low coverage in our study were recall bias due to delay in survey post MDA and ongoing pandemic of COVID.

The drug compliance in our study was found to be 97.75% which is different from findings obtained by Praveen Kulkarni⁸ et al who observed compliance of 72.6%. In a study done by Ananyalakshmi and Ranganath BG¹⁰ the MDA campaign showed compliance of 91.3% which is similar to present study. In another study done by Prakash patel⁹ compliance of MDA was 78.6% in Bagalkot district and 38.8% compliance in Gulbarga which are different findings from our study. In a study done by Vijaykumar P. Mane, Ravindranath A. Bhovi¹² the coverage to MDA in Bidar district was 82.1% which is similar to our study. In a study done by GURURAJ, N A et al¹³ the coverage rate and compliance rate of MDA were 73.1% and 75.1%, respectively which is different from our study. Banerjee S et al¹⁴ observed that the compliance with drug ingestion was 89% and the effective coverage (75.8%) was much below the target (85%). In a study done by Srivastava PK et al¹⁵ MDA was done in total nine rounds with drug coverage ranging from 83% to 90% in different MDA rounds and with drug compliance rate of more than 65% in each of the MDA round. In a study done by Singh S, Patel M, Kushwah SS.¹⁶ the coverage rate was 607 (94.6% of eligible) with variation across different areas and the compliance rate was 89.9%. Perni SG et al.¹⁸ found that overall effective coverage ranged from a high of 87.25%. In 2007 Bikash¹⁹ found that overall drug distribution coverage is 94% and effective coverage rate is 88%. In a study done by Kumar P²⁰ The coverage rate was 85.2% with variation across different areas. The compliance with drug ingestion was 89% with a gap of 11% to be targeted by intensive IEC. The total effective coverage was (75.8%) was much below the target (85%).

2) Fear of side effects

The most common reasons for non-compliance to MDA in a study done by Vijaykumar P. Mane, Ravindranath A. Bhovi¹² were fear of side reactions which is similar to our study. Babu BV and Mishra¹⁷ also found that the fear of adverse reactions is the predominant reason for not consuming the tablets. In the study done by Prasad VG, Malhotra VM, Kishore YJ et al.²¹ Fear of side effects (76.47%) and being unaware of the benefits (21.56%) were the main reasons for non-compliance. In a study done by Hussain, M.A., Sitha, A.K., Swain, S. *et al.*²² the cause of non-compliance was mostly due to fear of side effects. All these reasons can be tackled by improving the IEC activities prior to MDA programme so that the eligible population is well aware of benefit and safety of the programme.

VI. Summary & Conclusion

MDA assessment was done in Patancheru, Sangareddy, Kondapur, and Pulkal clusters of Sangareddy district. The coverage of population with anti-parasitic drugs was found to be 79.46% and 20.54% of study population was not covered by DD. The drug compliance was found to be 97.75% and 2.25% noncompliance. The main reason for noncompliance was fear of side effects.

The four different clusters of Sangareddy district was included in the study. The coverage of MDA was less than the required one. It requires more than 85% coverage for elimination of lymphatic filariasis which should be sustainable in 5 to 6 annual rounds which is going to meet in near future. Majority of the population consumed drugs in the presence of DD. People were aware about mode of transmission, dosage of drug & about MDA for Filariasis. It shows that wide publicity was given by health workers for the same. All the cases of lymphatic filariasis reported were old cases only. No new case was found during assessment.

VII. Recommendations

1. IEC should be intensified through mass media approach.
2. The reasons for not consuming the drugs should be done away effectively by involvement of community leaders.

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