

Coverage and Compliance of Mass Drug Administration for Elimination of Lymphatic Filariasis in Bijapur District, Karnataka

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Abstract

Background: Lymphatic Filariasis (LF) is the world's second leading cause of long-term disability. The current estimate reveals that 120 million people in 83 countries of the world are infected with LF parasites and more than 20% of the world's population are at risk of acquiring infection. The present study was conducted to assess the program effectiveness of the 2-drug strategy in terms of actual coverage, compliance rates of MDA against filariasis in the district along with the reasons for non-compliance. **Objectives:** To evaluate independently the MDA Programme against Filariasis with respect to its coverage and compliance among the community. To know the reasons for non-compliance. **Materials and Methods:** A Community based Cross-Sectional Study was conducted in Bijapur District. A total of four clusters, one urban and three rural clusters were selected randomly. All the sampled eligible population who belong to the MDA campaign area were included. The eligible population did not include pregnant and lactating women, children below two years of age and seriously ill persons. The data were collected in pretested Performa, tabulated using Microsoft Excel 2013 and analysed using OPENepi software. **Results:** The demographic profile of the study sample is as follows, 67.6% of the population were in the age group of 14-60 years. Male to female ratio was equal. 66.48% of the study population were from rural area and 33.52% were from urban area. 81.63% of the population received the drugs. 79.21% of the population consumed the DEC and Albendazole tablets. 14.60% of the sample population did not consume. Major reasons for not taking tablets were fear of side effects (56.67%) and 22.50% forgotten to take the tablets. **Conclusions:** The effective coverage was below the target (85%). The overall coverage was better in rural areas compared with urban areas.

Key words: Mass drug administration, Lymphatic filariasis, DEC, Coverage, Compliance

INTRODUCTION

Lymphatic filariasis (LF) is the world's second leading cause of long-term disability. The current estimate reveals that 120 million people in 83 countries of the world are infected with LF parasites and more than 20% of the world's population are at risk of acquiring infection.¹ It is endemic in more than 83 countries and territories, with more than a billion people at risk of infection. It is one of the world's leading causes of permanent and long-term disability with an estimated 5.1 million disability adjusted life years (DALYs) are lost due to this disease.^{2,3} Estimates reveal that 554.2 million people are at risk of LF infection in 243 districts across 20 states and union

territories of India.⁴ The global programme to eliminate LF began its first mass drug administration (MDA) campaign in 1999 after the 50th World Health Assembly resolved that LF should be eliminated as a public health problem.⁵ WHO had recently called on member states to identify the global elimination of LF as a public health priority.⁶ The International Task Force for Disease Eradication too had identified LF as one of the seven infectious diseases considered eradicable or potentially eradicable.⁷

The National Filaria Control Programme (NFCP) was launched in 1955 for the control of Bancroftian filariasis and now, National Health Policy goal is to eliminate LF from India by the year 2015.⁸

Recent research studies showed that annual single-dose MDA with Diethylcarbamazine (DEC) is an effective tool for the control of LF and 5-10 rounds of treatment with 75-80% coverage could possibly eradicate it by reducing the transmission to very low levels.⁹ The Government of India (GOI) in 2004 began a nationwide MDA campaign in all the known LF endemic districts with an annual single dose of DEC with the aim of eliminating it as a public health problem by the year 2015 according to National Health Policy 2002.¹⁰ World Health Organization has recommended single-dose DEC and albendazole as a preferred combination for repeated, annual MDA in filariasis endemic areas, which reduces blood microfilaria (MF)

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counts.^{11,12} In order to achieve the goal of ELF in India by 2015, National Filaria Day was proposed to be observed every year starting from 2004 in the endemic districts.¹³

An effective surveillance can help fulfil the aim of global elimination of LF as a public health problem.⁵ Hence, this survey was conducted to assess the program effectiveness of the 2-drug strategy in terms of actual coverage, compliance rates of MDA against filariasis in the district. This evaluation survey was conducted 3 months after the MDA campaign over a period of 3 days by the author for the GOI through Chief Medical Officer, Regional Office for Health and Family Welfare, Bengaluru.

MATERIALS AND METHODS

A Cross Sectional Study was done in 2nd week of August 2014 in one of the filaria endemic district, Bijapur District in Karnataka state. One cluster (ward) from urban area and three clusters (three primary health centre's (PHC) from rural areas were selected randomly from the list of urban wards and PHC's where the MDA was carried out. From the PHC's, one subcenter was selected and then one village from that subcenter was selected randomly from the list of subcenters and villages in the PHC's. One urban area selected is Muddebihal taluk proper. Three PHC'S are 1)Kolhar, 2)Ronihal of Basavanbagewadi taluk and 3)B-darkundi village, Dhavalagi PHC of Muddebihal taluk. Four clusters each cluster having 30 households selected comprising one urban and 3 rural areas. 3 clusters selected on the basis of three PHC's and one

urban cluster from Taluka hospital. From each PHC One village, from that one ward and from that ward 30 households selected. All the sampled eligible population who belong to the MDA campaign area are included. The eligible population did not include pregnant and lactating women, children below two years of age and seriously ill persons. The interviewer who conducted the interviews in the Bijapur district was trained informally in the regional office for health and family welfare, Bengaluru in all aspects of coverage survey. A total of 120 households were visited in four areas selected covering a population of 713. House to house field survey was conducted and filled the proforma using personal interview method. Informal consent was obtained from the participants. Drug distributors were health workers, anganwadi workers, accredited social health activist and student volunteers a formal training programme was organized to all the staff who was involved in the MDA campaign in the district headquarters. This survey assessed only the coverage aspect and not the entire MDA implementation programme. The data were collected in a pre-tested proforma, computed in Microsoft Excel and analyzed using OPENEpi software.

RESULTS

A total of four clusters (one urban ward and

three rural villages) resulted in a total study population of 713. The basic characteristics of the study population regarding different age group, sex and education was studied. Majority of the respondents were in the age group of 14-60 years (67.6%). The males in the study population were 50.21%. 66.48% of the study population were from rural area and 33.52% were from urban area. 81.63% of the population received the drugs.

Table 1: Distribution of Respondents According to Age, Sex and Place of residence (N = 713)

Age Group (Years)		
Age	No.	%
<2	12	1.68%
2 - 5	50	7.01%
5 - 14	126	17.67%
14 - 60	482	67.60%
>60	43	6.03%
Total	713	100.00%
Sex		
Sex	No.	%
Male	358	50.21%
Female	355	49.79%
Total	713	100.00%
Place of Residence		
Place	No.	%
Urban	239	33.52%
Rural	474	66.48%
Total	713	100.00%

Table 2: Distribution of Respondents According to Drugs received and Drugs consumed

Drugs Received		
Received	No.	%
Yes	582	81.63%
No	131	18.37%
Total	713	100.00%
Drugs Consumed		
Consumed	No.	%
Completely	461	79.21%
Partially	36	6.19%
Not Consumed	85	14.60%
Total	582	100.00%

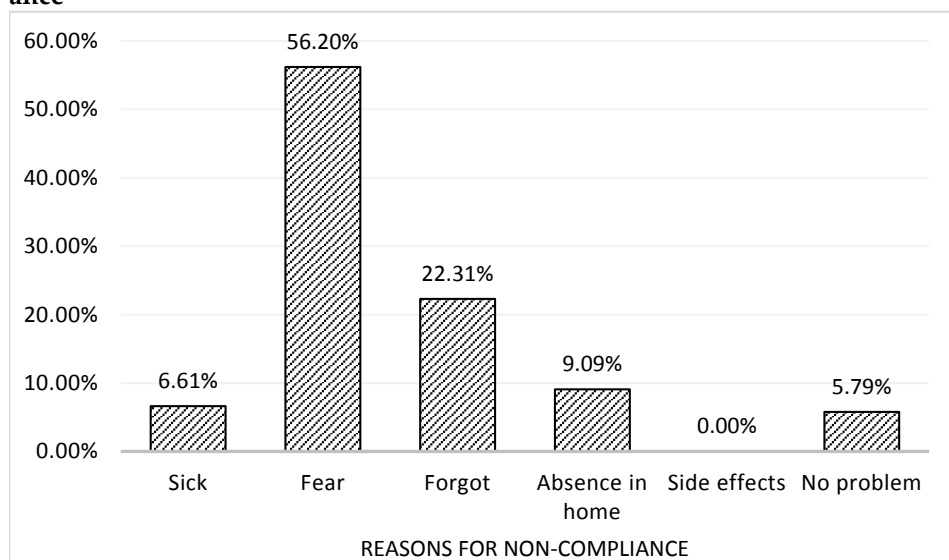
Table 3: Distribution of Respondents According to Drugs taken

Drugs Taken	Urban		Rural		Total
	Male	Female	Male	Female	
Complete DEC+ Albendazole	97	90	138	133	458
Complete DEC + Partial AL	0	0	2	1	3
Partial DEC + Complete AL	12	11	6	4	33
Partial DEC + Partial AL	0	0	2	1	3
Not taken	3	2	42	38	85
Total	112	103	190	177	582

Table 4: Distribution of Respondents According to Drugs received and Drugs consumed

Reasons for Non-Compliance	No.	%
Sick	8	6.61%
Fear	68	56.20%
Forgot	27	22.31%
Absence in home	11	9.09%
Side effects	0	0.00%
No problem	7	5.79%
Total	121	100.00%

Figure-1: Distribution of respondents according to reasons for Non - Compliance



79.21% of the population consumed the DEC and Albendazole tablets. 14.60% of the sample population did not consume. The main reasons for non-compliance was fear of side effects (56.67%) and 22.5% forgotten to take the tablets, followed by not present at home (9.17%).

DISCUSSION

The present study is a qualitative cross sectional study, covering a target population of 713 from four clusters. A high coverage (>85%) in endemic areas, which is sustained for 5 years, is required to

achieve the interruption of transmission and elimination of disease in India.¹⁴ The major challenge with the currently available drugs is to attain this high coverage. Current approaches to drug delivery are able to achieve only 40-60% coverage if MDA is executed by regular health services.

In the current study the coverage rate for DEC plus albendazole was 81.63%. Similar findings were observed in studies conducted by Ranganath TS et al¹⁵, Kulkarni MM et al¹⁶, Kumar P et al¹⁷ and Ravish KS et al¹⁸ being 78%, 84.6%, 85.9% and 85.2% respectively. In contrast to our study, the coverage rates in studies conducted by DM Koradhanyamath et al¹⁹, Ranganath TS et al²⁰, Shetty A et al²¹ and Ghosh S et al²² were 62.3%, 95%, 97.36% and 98.8% respectively.

The compliance of MDA is more sensitive indicator than the coverage because this indicates the actual consumption of tablets by the beneficiaries. In the present study, the compliance among those who had received the tablets was 79.21%. Similar findings were observed in studies conducted by Dorle AS et al²³, Mukhopadhyay AK et al²⁴, Shetty A et al²¹ and Hussain M et al²⁵ being 77.34%, 64.6%, 77.77% and 77.3% respectively. The compliance rate of current study was high compared to the studies done by Ranganath BG et al²⁶, Ravish KS et al¹⁸, Gowda P et al²⁷, Kulkarni MM et al¹⁶, DM Koradhanyamath et al¹⁹ and Ranganath TS et al¹⁵ being 32.7%, 45.9%, 52.18%, 56.5%,

60.4% and 68% respectively. On the other hand compliance rate was as high as 89%, 93% and 94.8% in studies conducted by Kumar P et al¹⁷, Ranganath TS et al²⁰ and Ghosh S et al²² respectively. Similar to the other studies, the main reason for non-compliance was either the drug was not given or individual not at home. Hence more inputs are required to achieve desired levels of compliance and there is an urgent need for more effective drug delivery strategies. One of the best strategies to improve compliance was consumption of tablets in front of drug distributors.

The main reasons for not consuming the tablet in the current study was fear of side effects (56.67%) and 22.5% forgotten to take the tablets followed by not present at home (9.17%). Similarly according to studies conducted by Kumar A et al²⁸, Shetty A et al²¹, Ghosh S et al²² and Gowda P et al²⁷ the main reason for non-compliance being fear of side effect in 80.6%, 58%, 54.3% and 22% respectively. In contrast to current study, the studies done by Ranganath TS et al²⁰, Ranganath TS et al¹⁵, Kulkarni MM et al¹⁶ and Hussain M et al²⁵ showed that the most common reason for non-compliance was they were not present at home when the tablets were distributed in 62%, 55%, 29.6% and 25.72% respectively. On the other hand in a study conducted by Dorle AS et al

²³ the main reason for non-compliance was empty stomach (50.36%) and by Ravish KS et al¹⁸, 51.8% people said that they have not been informed properly about why and how much they should consume.

LIMITATION

This study was conducted after 3 months of MDA campaign which is a limitation (recall bias).

CONCLUSIONS AND RECOMMENDATIONS

1. Involvement of village leaders: Health workers must take the social and religious leaders into confidence and seek their help in getting across the message to the people in a more effective way.

2. As village people prefer AWW and ASHA workers for drug distribution, same may be sent for creating awareness among villagers.

3. Evaluation team can be sent to the MDA Implemented districts immediately after activity.

4. Better co-ordination with other sectors, involvement of NGOs, local leaders and self-help groups need to be emphasized.

5. Drug distributors to be informed about the importance of supervised "on the spot" consumption of tablets.

6. The tablets must be given in blister packs.

7. Urban areas lack both compliance and consumption, more awareness and proper IEC is the need of the hour.

8. The required target of >85% compliance for elimination of Filariasis can be achieved with effective IEC strategy, training of drug distributors to improve interpersonal communications and effective drug delivery strategies with improvised supervision of MDA activity.

9. Capacity building: More emphasis should be given on capacity building among all level of health professionals, health workers.

10. High school students should not be recruited as drug distributors as they may not understand the importance of the programme.

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