

# POST MASS DRUG ADMINISTRATION EVALUATION SURVEY FOR LYMPHATIC FILARIASIS IN BIDAR DISTRICT

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## ABSTRACT

**Background:** Lymphatic filariasis (LF) is gruesome disease which is endemic in many countries, with more than a billion people at risk of infection. In view with the global elimination, mass drug administration (MDA) with single dose of diethylcarbamazine tablets was carried out for the eligible population in Bidar district.

**Aims & Objective:** This study was undertaken to assess coverage of MDA against Lymphatic Filariasis in Bidar district.

**Material and Methods:** A cross-sectional coverage evaluation survey in one urban and three rural clusters were selected randomly in Bidar district. The data were collected in a pretested interview performa, computed and analyzed using SPSS-12.0 to calculate frequencies and proportions.

**Results:** A total of four clusters in the districts resulted in a study population of 642 individuals. The overall compliance rate in Bidar district was 52.18%. The prime reason for noncompliance was fear of side effects, not received tablets and not present at home.

**Conclusion:** There is an urgent need for more effective drug delivery strategies to improve the compliance in the district.

**KEY-WORDS:** Mass Drug Administration; Lymphatic Filariasis; Diethylcarbamazine

## Introduction

Lymphatic filariasis (LF) is a gruesome disease and one of the important public health problem faced by many developing countries in the world.<sup>[1]</sup> 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.<sup>[2,3]</sup> Estimates reveal that 554.2 million people are at risk of LF infection in 243 districts across 20 states and union territories of India.<sup>[4]</sup> The global programme to eliminate LF began its first mass drug administration (MDA) campaign in 1999 after the 50<sup>th</sup> World Health Assembly resolved that LF should be eliminated as a public health problem.<sup>[5]</sup>

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.<sup>[6]</sup> 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.<sup>[7]</sup> 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) counts.<sup>[8,9]</sup>

An effective surveillance can help fulfil the aim of global elimination of LF as a public health problem.<sup>[5]</sup> Hence, this survey is to assess the actual coverage of MDA with single dose DEC in Bidar district of Karnataka state and to recommend mid-course improvements. 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

The study was conducted in one of the filaria endemic district, Bidar in Karnataka state. This was a cross-sectional survey. The study was conducted from 15<sup>th</sup> to 17<sup>th</sup> October 2007. The study population includes all the sampled eligible population who belong to the MDA campaign area. The eligible population did not include pregnant and lactating women, children below two years of age and seriously ill persons.<sup>[3]</sup> The interviewer who conducted the interviews in the Bidar districts was trained informally in the regional office for health and family welfare, Bengaluru in all aspects of coverage survey.

Three clusters (three primary health centers) from rural areas and one cluster (ward) from urban area were selected randomly from the list of PHC's and urban wards 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. In those selected villages, 30 randomly selected households were covered. All the available individuals at the time of interview in the household were taken. A total of 120 households were visited in four areas selected covering a population of 642. House to house field survey was conducted and filled the performa 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 study was conducted after 3 months of MDA campaign which is a limitation (recall bias). This survey assessed only the coverage aspect and not the entire MDA implementation programme. The data were collected in a pretested performa, computed in Microsoft Excel and analyzed using SPSS-12.0. Chi-square test was used to test the significance.

## Results

A total of four clusters (one urban ward and three rural villages) resulted in a total study population

of 642. 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 15-59 years (65.7%). The males in the study population were 51.4% (Table 1). Majority of males and females who consumed DEC tablets were in the age group of 15-59 years (Table 2). The main reasons for not consuming the tablet was fear of side effects (22%), not received tablet (20.2%), followed by not present at home (17.6%) and drug given at home but no information (9.1%) in Bidar district (Table 3).

**Table-1: Distribution of Respondents According to Age, Sex and Education (N = 642)**

Variables	Number (%)
<b>Age Group (Years)</b>	
2 - 5	48 (7.5)
6 - 14	120 (18)
15 - 59	422 (65.7)
> 60	52 (8.01)
<b>Sex</b>	
Male	330 (51.4)
Female	312 (48.6)
<b>Education</b>	
Illiterate	206 (32)
Preschool	85 (13.2)
Primary	186 (28.9)
Secondary	128 (19.9)
Graduate	32 (5.0)
Post Graduate	5 (0.8)

**Table-2: Distribution of Respondents Based on Consumption of DEC Tablets**

Age in Years	Male	Female	Total
2 - 5	12	7	19
6 - 14	30	25	55
15 - 59	110	118	228
>60	18	15	33
<b>Total</b>	<b>170</b>	<b>165</b>	<b>335</b>

**Table-3: Distribution of Study Population according to the Reason for Not Consuming Tablet (N = 307)**

Reasons for Non-Consumption	Number (%)
Did not receive tablets	62 (20.3)
Not present at home	54 (17.6)
Drug given at home but no information	28 (9.2)
Too small to take drugs	20 (6.5)
Too many tablets	16 (5.3)
Fear of side effects	68 (22)
Forgot to take	34 (11)
Fear to give drugs to children	25 (8.1)

The compliance among study subjects according to age, sex, and area-wise was studied. The overall compliance rate in Bidar district was 52.18%. Compliance was marginally better among older

people. The main reason for noncompliance among <15 years children fear of side effects (22%), not received tablet (20.2%), not present at home (17.6%), drug given at home but no information (9.1%) and fear of giving drugs to children (8.1%) in Bidar district. The compliance was significantly better in rural area compared to urban ward ( $\chi^2 = 27.56$ ,  $P < 0.001$ ) and the compliance among men and women was almost similar ( $P > 0.05$ ) (Table 4). Among the people who had the knowledge of MDA programme majority of them got the information from health workers, Anganwadi workers, loud speakers and Banners.

**Table-4: Distribution of Study Population according to Compliance to DEC**

Variables	Eligible Population	Actually Consumed	Compliance (%)	Chi-Square Test
<b>Age Group (Years)</b>				
2 – 5	48	19	39.6	1.98 $P > 0.05^*$
6 – 14	120	55	45.8	
15 – 59	422	228	54.1	
> 60	52	33	63.5	
<b>Sex</b>				
Male	330	170	51.5	0.03 $P > 0.05^*$
Female	312	165	52.9	
<b>Area</b>				
Urban	170	40	23.5	27.56 $P < 0.001^{**}$
Rural	472	295	62.5	

\* Statistically not significant; \*\* statistically significant

## Discussion

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.<sup>[10]</sup> The 52.18 % compliance in Bidar district observed was below the expected target. In previous studies of MDA in India, reported similar lower compliance rates which was ranging from 38.8 to 41.6%.<sup>[11-13]</sup> In much of India, compliance appears to have not changed much between 2000 and 2007.<sup>[11-14]</sup> Similar to other studies in India, the main reason for noncompliance was Fear of side effects, drug was not given or individual not at home.<sup>[15]</sup> Hence, there is an urgent need for more effective drug delivery strategies. The probable reason was some rumor spread during the last year MDA campaign regarding the side effects in Bidar district. Similar to other studies, the coverage and compliance were better in rural areas when compared to urban areas in our study.<sup>[15]</sup> Hence,

need special attention in urban areas during the MDA in the district.

## Conclusion

The MDA coverage and compliance should be given at most importance because, six rounds of MDA, even with 54-75% treatment coverage, can reduce LF transmission very appreciably and better treatment coverage and a few more rounds of MDA may achieve total interruption of transmission.<sup>[16]</sup>

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