Mass Drug Administration program for Lymphatic Filariasis control - A coverage Evaluation Study from a Low Endemic District in Kerala

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ABSTRACT

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Introduction: Mass Drug Administration is an important strategy in areas with high microfilariemia for elimination of Lymphatic Filariasis. The objective of the current study was to assess the compliance rates of MDA drugs and the reach of Information Education Communication activities conducted as part of MDA programme in Kollam district, Kerala.

Materials and Methods: A cross sectional study was conducted in 210 households selected by cluster sampling technique in Kollam district, Kerala.

Results: Compliance to MDA drugs in Kollam district during the year was 48% (95% CI 44.6- 51.34). Among reasons for not consuming tablets, fear of side effects was reported by 26.2% followed by ignorance of the need of taking the tablets (12.9%). Only 18.1% (38/210) people interviewed felt that they had a chance of getting filariasis and 80.1% (161/201) answered correctly that filariasis spreads through mosquito bite.

Discussion: Despite a high literacy rate and strong health system nearly one fifth of the people were still not aware of the mode of transmission of lymphatic filariasis. The major barriers for MDA still remain unchanged even after eight years.

Keywords: Filariasis, Mass drug administration, Coverage evaluation

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INTRODUCTION

Lymphatic Filariasis (LF) one of the oldest of disease known to mankind and still continues to be a problem affecting millions of people across the globe. The painful and profoundly disfiguring visible manifestations of the disease, lymphoedema, elephantiasis and scrotal swelling occur later in life and lead to permanent disability. These patients are not only physically disabled, but suffer mental, social and financial losses contributing to stigma and poverty. 947 million people in 54 countries worldwide remain threatened by lymphatic filariasis and require preventive chemotherapy to stop the spread of this parasitic infection.[1]

Globally there are about 120 million people with infection or lymphatic pathology due to lymphatic filariasis (LF). India alone bears 40% of the global burden of this disease.[1] Heavily infected areas in India are found in the states of Uttar Pradesh, Bihar, Jharkhand, Orissa, Kerala, Gujarat .[2] The total disability adjusted life years lost in India due to this disease is around 2.06 million, resulting in an annual wage loss of US $811 million.[3] The formal goal of the global lymphatic filariasis programme is to eliminate the disease "as a public health problem" and 2020 is the target date for interrupting transmission. The strategy calls for mass administration (MDA) of a two drug regimen, diethylcarbamazine (DEC) and albendazole as a single dose annually for 4-6 years.[4] The Government of India is signatory to the World Health Assembly Resolution in 1997 for Global Elimination of Lymphatic Filariasis. The National Health Policy (2002) envisages elimination of lymphatic filariasis in India by 2015.[5]

In Kerala, Mass Drug Administration for lymphatic filariasis was started in 2004 in eleven districts. The eighth round of MDA was held in Kollam district from March 12th-24th 2013. The strategy was as per national guide lines and included house to house approach, booth approach and group approach.[4] The objective of the current study was to assess the compliance rates of

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MDA drugs and the reach of Information Education Communication activities conducted as part of MDA programme in Kollam district, Kerala.

MATERIALS AND METHODS

Study area: Kollam, a district located on the southwest cost of Kerala, with a population of around 2.6 million, has a 0.2% population of tribals. The sex ratio is 1113 women for 1000 men and the literacy rate for women is 91.95%.

Study design: Cross-sectional survey.

Study period: The study was conducted during the first week of April 2013

Inclusion criteria: Any permanent resident of Kollam district

Exclusion criteria: Pregnant and lactating women, children below two years of age and seriously ill persons were excluded as they were excluded from the original programme also.

Sampling technique: Cluster sampling technique was used for the study. Two Primary Health Centre areas from each of the 15 Health blocks of the district were selected randomly. A ward was picked from the ward list under the selected PHC area randomly. In the ward first house was selected randomly and then a total of six houses were selected by visiting every third house. The head of the household or the eldest member present at the time of visit to the house was selected for interview

Analysis: Data was entered in Microsoft Excel. Descriptive statistics including frequencies and percentages were calculated for the responses.

RESULTS

210 households were visited which comprised of 631 and 188 people aged more than and less than12 years respectively. Compliance to MDA drugs in Kollam district during the year was 48% (95% CI 44.6- 51.34).

Table 1. Reasons for not taking the MDA tablets (N=112)

Reason for not consuming tab	(%)
Fear of side effect	26.7%
Anti-propaganda	10.7%
Don't have disease	7.1%
Don't know need of taking	12.5%
Having other co-morbidity	16.1%
Tablets given as open in hands	7.1%
Others	19.8%

Table 2. The reach of IEC materials of the campaign (N=210)

IEC of MDA program	(%)
Information through health worker	74.3%
Advertisement in TV	50.5%
Travelling van	27.6%
Posters & notices	11.4%
Advertisement in radio	3.3%

In 40% (84/210) of the households surveyed, none consumed tablets this year. Complete members of 33.3% (70/210) households took the tablets this year. 50.4% adults took the tablets this year, while the compliance based on recall from last year was 47.6%. Similarly, 36% children took tablets this year, where in 2012 it was 30.5%.

Among reasons for not consuming tablets, fear of side effects was reported by 26.2% followed by ignorance of the need of taking the tablets (12.9%). The other major reasons are mentioned in **Table 1.** The major source of information about MDA has been tabulated in **Table 2.**

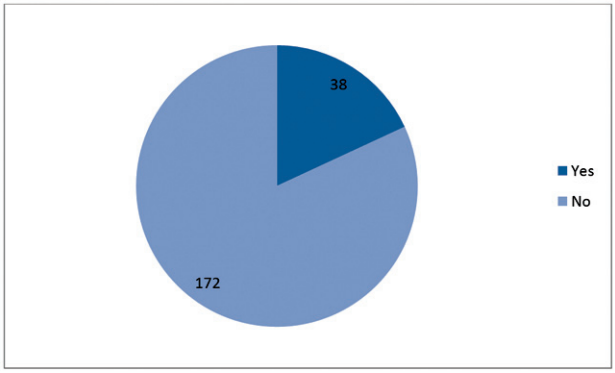

Figure 1. **Do you have the chance of getting filariasis? (N=210)**

Only 18.1% (38/210) people interviewed felt that they had a chance of getting filariasis and o 80.1% (161/201) answered correctly that filariasis spreads through mosquito bite **(Figure 1 and 2).**

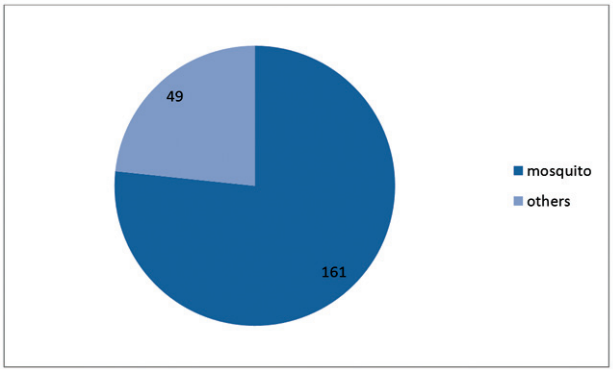

Figure 2. **How does filariasis spread? (N=210)**

DISCUSSION

If a proportion of the population fails to comply with MDA, a potential reservoir for the parasite is left untreated, opening the door to recrudescence of the microfilaraemia and thus reducing the probability of the program's success. It is estimated that in order to interrupt transmission, MDA compliance must exceed 65–75%, with five to six rounds of treatment.[6] None of the studies done in India, including our study, has reported a figure closer to the desired coverage level.[7-10]

Despite a high literacy rate and strong health system nearly one fifth of the people were still not aware of the mode of transmission of lymphatic filariasis. The reason for a low perceived risk of filariasis could be the low prevalence of the diseases in this area. The major barriers for MDA still remain unchanged even after eight years. A systematic review published in 2012 cited similar problems affecting the compliance rate globally. It has to be kept in mind that the official coverage figures of MDA were too high when compared to the survey results.

As approximately two-thirds of those infected remain asymptomatic, these individuals in particular may not realize that they could personally benefit from DEC. The message that all people living in endemic areas are at risk of infection and that one could be infected even if asymptomatic should be emphasized in further pre-MDA educational campaigns. The migrant labourers from filarial endemic areas pose a huge threat to the district as almost 27 cases of LF were discovered in the blood investigation carried among migrant labours of the district with a Mf rate of 3%. Though the prevalence of disease still remains small in the district, presence of the vector in abundance and importation of cases due to migration can lead to indigenous transmission again.

MDA may need to be continued at least in a few districts of Kerala for some more years. The findings may help the policy makers while planning further sessions. Sensitizing the populations about the risk and benefits of MDA is essential. Advocacy and community-based education are also essential tools in making this goal a near reality. The current program has not fully succeeded in solving this issue and gaining faith among individuals. One to one communication describing the need for MDA and alleviating fear of side effects may increase MDA compliance. A strong post distribution follow-up mechanism might be helpful to achieve better compliance.

END NOTE

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Conflict of Interest: None declared

Editor's Remarks: This field study done in an endemic area of Filariasis helps to get feedback about the effectiveness of field programmes in the eradication of endemic Filariasis. There is a lot of resistance to the administration of drugs to control Filariasis. Overcoming these resistance is a top priority.

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