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Original Research Article

Evaluation of mass drug administration programme for elimination of lymphatic filariasis in Bidar district, Karnataka

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ABSTRACT

Background: Lymphatic filariasis (LF) is endemic in 83 countries and territories, with more than a billion people at risk of infection. Filariasis has been a major public health problem in India next only to malaria. Study was done to assess coverage and compliance of mass drug administration (MDA) against lymphatic filariasis in Bidar district.
Methods: This cross-sectional coverage evaluation survey was done in one urban and three rural clusters in district. The data was compiled, tabulated and analyzed using proportions.
Results: A total of 739 subjects were interviewed, male subjects constituted about 57.5%. 96.58% persons have received the drugs. Out of the 678 persons who have received the drugs, 85.4% persons have consumed the drugs. Only 31.95% of study subjects consumed tablets in front of health workers. A total of 99 subjects not consumed tablets, 22.22% told drug distributor did not visit, 21.21% were out of station and 14.14% subjects were not aware. 24 persons suffered from nausea and vomiting.
Conclusions: There is an urgent need for more effective drug delivery strategies and also proper IEC should be done to educate and to improve the coverage and compliance in the districts.

Keywords: Lymphatic filariasis, Mass drug administration, Coverage, Compliance, Diethylcarbamazine, Bidar

INTRODUCTION

Lymphatic filariasis (LF) is one of the important public health and socioeconomic problem faced by many developing countries in the world.[1] It is endemic in 83 countries and territories, with more than a billion people at risk of infection. Nearly 120 million people are affected worldwide of whom about 40 million are incapacitated and disfigured by the disease. 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]

The most practical and feasible method of controlling LF is rapid reduction of microfilaria load in the community by annual mass drug administration (MDA) of a single dose of diethylcarbamazine (DEC).[4] Large scale chemotherapy plays a vital role in the control of many parasitic diseases.[5] 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.[6] 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.[7] 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.[8,9] The World health Assembly targeted lymphatic filariasis for elimination mainly through a strategy of mass drug administration (MDA). The effectiveness of the lymphatic filariasis elimination depends on upon the consumption of the recommended drug by the affected population. However, implementation of MDA led to diverse problems in some communities (urban areas, remote areas, migrant population and minority groups), with high rates of non-compliance having caused low treatment coverage. Although, MDA alone has been shown to suppress transmission of lymphatic filariasis in many areas where it has been implemented, it is often accompanied by resurgence once there is residual infection in the population. Therefore, sustainability of transmission suppression of lymphatic filariasis could be achieved only through integration of different strategies of vector control along with MDA. Besides, monitoring of the success of the lymphatic filariasis elimination programme depends on entomological studies of the mosquito vectors that transmit the disease in endemic communities.[10] Hence, this survey was done to assess the coverage and compliance of MDA in Bidar district.

METHODS

There are 5 taluks in the district, as per the guidelines, four sites have to be selected. One among them is urban. Bidar city is selected for urban. The sites were arranged in the descending order of the coverage of MDA. It was decided to select an average performed area and 10 bedded PHC was selected as urban site from Bidar. In order to select three sites, the PHC's have been classified into three strata, that is, mutually exclusive and exhaustive groups. It is based on the coverage of 13th round of MDA. The primary health centers are arranged according to the coverage, as reported, in descending order. The width of the class interval of each stratum is made equal, that is divided by three, works out to be 19. The three strata, along with class intervals, were high (100-119), medium (80-99) and low (60-79) performance. From each stratum, one PHC is selected randomly using the MS excel worksheet. The respective selected PHC's were Hallikhed (K) and Dhumansur from Humnabad taluk Hallburga under Bhalki taluk. In the selected primary health centers, the sub centers (SC) under the PHC were arranged in descending order of the coverage. The high performance SC in the first group is selected and the middle one is selected in the second one and the poor performance SC is selected in the third one. This selection is made giving the weight to the performance of each SC's. A village is selected from each of the sub center randomly. The households in the villages were contacted and the details were collected as per the pre-designed schedule. The population to be contacted was fixed at a minimum of 150 in each site, so that the total coverage should be at least 600. The study was carried out during September 2017.

Collection of data at village level

The team of investigators visited PHC's and then selected sub centers. They interacted with the concerned drug distributors in the selected SCs as well as the medical officers of the PHC's. Investigators visited the selected villages and with the help of drug distributors collected the required information from the residents of the villages. In total, 120 houses were visited during the survey, with a minimum of 30 houses in each of the cluster. The data were collected in the pre designed and structured questionnaire and were entered in the excel sheet for processing.

RESULTS

A total of 739 subjects were interviewed. The overall coverage of MDA in Bidar district was 96.58% and compliance rate was 85.39%. Male subjects constituted about 57.5% and female 42.5% (Table 1). Among the total study population (739), 37 persons (5%) were excluded due to the reason of exclusion category viz., less than 2 years and Pregnancy, feeding mothers. The beneficiary population then works out to be 702.

Table 1: Age-gender wise distribution of study subjects.

Age/Sex	Male (%)	Female (%)	Total (%)
<15 years	84 (19.76)	72 (22.92)	156 (21.1)
>15 years	341 (81.24)	242 (77.08)	583 (78.89)
Total	425 (57.5)	314 (42.5)	739

* Figures in bracket are percentages.

Out of the 702, 678 (96.58%) persons have responded that they had received the drugs (Table 2).

Table 2: Distribution of study subjects based on whether they had received drugs.

Received drugs	No. of persons	Percentage (%)
Yes	678	96.58
No	24	3.42
Total	702	100.00

Table 3: Distribution of study subjects based on whether they had consumed drugs.

Consumed drugs	Number of persons	Percentage (%)
Yes	579	85.40
No	99	14.60
Total	678	100.00

Out of the 678 persons who have received the drugs, 579(85.4%) persons have responded that they have consumed the drugs (Table 3). Only 31.95% of study subjects consumed tablets in front of health workers (Table 4). A total of 99 subjects not consumed tablets, 22.22% told drug distributor did not visit, 21.21% were out of station and 14.14% subjects were not aware (Table 5). 24 persons suffered from nausea and vomiting (Table 6).

Table 4: Consumption of tablets in presence of drug distributor.

Consumed	No. of persons	Percentage (%)
DOTS	185	31.95
Non-DOTS	394	68.05
Total	579	100.00

Table 5: Distribution of subjects based on the reasons for non-consumption.

Reason for non consumption	Frequency	Percentage (%)
Drug distributor not visited	22	22.22
Out of station	21	21.21
Not aware	14	14.14
Fear of side reaction	2	2.02
No disease	27	27.27
Suffering from chronic disease other than filaria	5	5.05
Others	8	8.08
Total	99	100.00

Table 6: Distribution of subjects based on the occurrence of side effects.

Side effect	Frequency	Percentage (%)
Nausea, vomiting	24	100
Fever	0	0
Others	0	0
Total	24	100.0

DISCUSSION

In our survey a total of 739 people were interviewed. The overall coverage of MDA in Kalaburgi district was 96.58% and compliance rate was 85.39%. The percentages of male and female population of the study were 57.5% and 42.5% respectively. Out of the 702, 678 (96.58%) persons have responded that they had received the drugs. Out of the 678 persons who had received the drugs, 579 (85.4%) persons have responded that they had consumed the drugs. Only about 31.95% of the surveyed population has consumed in presence of the health worker.

Study by Patel in Kalaburgi district in year 2010 shows coverage rate of 39%. Majority of the respondents were in the age group of 15-59 years (63.9%), main reason for not taking drug was fear of side effects (51.2%) and did not receive tablets (15.2%). Only 2.3% actually experienced side effects.[11] Mukhopadhyay et al study in five districts of Andhra Pradesh shows 69.96% persons received DEC tablets and 64.64% actually consumed during MDA programme. Maximum coverage and consumption of DEC tablets during MDA programme was noted from East Godavari district as 94.57 and 76.06% respectively.[12] Babu et al study in Orissa in 2002 shows coverage rate 67.05% and 41.57% of compliance. The predominant reason for not receiving drugs was that the health worker or drug distributor did not visit the family (75.8%), followed by 'absence of family members'(7.5%), 'felt unnecessary' (6.6%), 'fear of sideeffects'(4.4%).[13] Lahariya et al study shows compliance rate in the range of 60–70% in 3 districts.[14]

CONCLUSION

The overall coverage of MDA in Bidar district was 96.58% and compliance rate was 85.39%. Reporting system need to be refined to get the tabulated registered data right from the village level to PHC, taluk and district level. The observation of supervisors appointed for MDA need to be brought under the daily activity schedule and to be monitored at PHC/district level to have concurrent/consecutive supervision. The staff employed for MDA may be trained to follow DOT and it may be monitored concurrently by the supervisors. The best IEC activity for MDA is inter-personnel communication. So this process may be made regular one in all the endemic pockets supportive control measures such as anti-larval work can be initiated to bring down the vector density so as to avoid transmission.

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