Original Article

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Mid Term Assessment of Mass Drug Administration for Elimination of Lymphatic Filariasis in Tikamgarh and Chhatarpur Districts of Madhya Pradesh, India

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Abstract

Introduction: Lymphatic filariasis (LF) is a crucial public health menace in India. It is one of the leading causes of long-term permanent disability, accounting for more than 5 million disability-adjusted life years annually. The mass drug administration (MDA) is one of the strategies to eliminate LF in India. 11 districts are endemic for the disease in Madhya Pradesh, which conduct MDA activities annually.

Objectives: (1) To review the progress of activities of the single dose of diethylcarbamazine (DEC) mass administration in Tikamgarh and Chhatarpur districts, (2) to make an independent assessment of the program implementation under process and outcome indicators, (3) to recommend mid-course correction and suggest necessary steps for further course of action.

Methods: An assessment of MDA for LF activities carried out from July 29, 2013 to August 01, 2013 in two districts of Madhya Pradesh. The teams visited the study areas and collected both qualitative and quantitative data to make an independent assessment. The activities carried out as per the standard methodology developed by National Institute of Communicable Diseases, Delhi.

Results: The sufficient number of training for MDA was conducted but without any mechanism for quality check. The impact assessment was done by the local authorities to understand the effect of the MDA. The filarial units in these districts had insufficient staff. There was an adequate supply of DEC tablets. The evaluated coverage with DEC tablets was much lower than that reported by the district officials, and the effective coverage was found to be 64.66% and 65.08% in Tikamgarh and Chhatarpur districts respectively. The tablet intake was not properly ensured by the distributors, and the compliance rate was between 74% and 78%. Lack of awareness was the most common reason reported for the non-compliance followed by improper counseling and absenteeism.

Conclusion: This evaluation study observed that MDA is confined to tablet distribution only and the major issues of implementation in compliance, health education, side effect, and morbidity management need to be addressed.

Key words: Compliance, Coverage, Filariasis, Mass drug administration

INTRODUCTION

Worldwide 1.3 billion people are at risk of lymphatic filariasis (LF) infection, and about 120 million people are affected in 83 countries. It is a major cause of physical and emotional suffering, as well as economic loss. The three species of nematode worm that cause LF are *Wuchereria bancrofti*, *Brugia malayi,* and *Brugia timori*. Bancroftian filariasis accounts for 90% of cases worldwide, including all cases of LF in the Pacific.[1] In India also, it has been a major public health problem next to Malaria. It is estimated that 600 million people are at risk of LF infection in 250 districts across 20 states and union territories in India.[2] LF was classed as one of six infectious diseases to be eradicable by World Health Organization. The disease was recorded in India as

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early as 6th century B.C. by the famous Indian physician, Susruta in his book "Susruta Samhita."[3] The National Filarial Control Program was launched in the country in 1955, with the objective of delimiting the problem, to undertake control measures in endemic areas. The main control measures were mass diethylcarbamazine (DEC) administration, antilarval measures in urban areas and indoor residual spray in rural areas.[4] Andhra Pradesh, Bihar, Jharkhand and Madhya Pradesh are among the worst affected states in the country.[5] Total 11 districts of Madhya Pradesh are affected with Falariasis *viz.* Katni, Datia, Chatarpur, Tikamgarh, Panna, Damoh, Satna, Rewa, Chhindwara, Sagar and Umaria.[6] Present study was carried out to evaluate the coverage, compliance and reasons for non-compliance of mass drug administration (MDA) in Tikamgarh and Chhatarpur districts of Madhya Pradesh.

Objectives

1. To review the progress of activities of single dose of DEC mass administration in Tikamgarh and Chhatarpur districts
2. To make independent assessment of the program implementation with respect to process and outcome indicators
3. To recommend mid-course correction and suggest necessary steps for further course of action.

METHODS

Selection of the Clusters in the Identified District(s)

Sample size covered in each district

The standard guidelines for MDA require that a total of 30 household are covered in each cluster covering four clusters per district. It is assured that at least 600 populations are covered in a single district for MDA evaluation. Therefore, keeping in the mind the standard procedure, in each district 120 households were surveyed.

The MDA assessment was carried out in both rural and urban areas in all three districts, as per the standard methodology. For evaluation of MDA activities in a district, all the Primary Health Care (PHCs) in a district were stratified into three groups (on the basis of reported MDA coverage in 2010): (i) PHC with coverage <50%, (ii) PHC with coverage between 50% and 80%, and (iii) PHC with coverage >80%.

For rural area

A PHC from each category was selected for MDA evaluation, in case there was no PHC in a particular category, and two PHCs from the next category were selected. In the next step, from each category of the PHC, one PHC was selected randomly. Afterward, from each of the selected PHC one village was selected randomly, using currency note for random number generation for the household survey. In each village, 30 households were covered using standard questionnaires developed for MDA evaluation.

For urban area

In the urban areas, the complete list of the wards was arranged. Thereafter, one ward was selected randomly for the evaluation of the program, using currency note for random number generation. In the next step, in each selected ward 30 households were covered.

Data Collection and Analysis

After collection of data from district health authorities and household surveys with the use of standard performa, it was thoroughly scrutinized and analyzed manually and with the help of suitable statistical software.

RESULTS

Assessment of Intra and Intersectoral Co-ordination

The coordination of different sectors of the community is must for the program to be successful. Intra and intersectoral coordination were overall found to be adequate in all districts. District action plan committee meeting was organized involving all the departments. Whose details are recorded but overall coordination of different departments was different. It was found sufficient in Chhatarpur and Tikamgarh districts. Volunteers were used for the DEC distribution and they also performed well, nevertheless teachers, government servants, politicians and community leaders were also urged to come forward and participate by making people aware and setting an example by consuming the drug before the public.

Assessment of Training

Trainings were organized at all level right from district to sub-center level in district Chatarpur and Tikamgarh for medical officers, paramedical workers, drug distributors, lab technicians, etc. The details of the trainings organized are recorded, but again, like last year what it was lacking was, that there was no system found for the quality check and attendance of these trainings.

Staffing

Understaffing was a major hurdle in implementing the program, same person is engaged in many tasks at a time due to vacant posts among all categories of stakeholders, i.e., medical officers, paramedical workers, drug distributors, lab technicians. However, it was more prominent in the staff of morbidity management where still numbers of posts are remaining vacant which need to be filled up at the earliest.

Process Indicators

1. The action plans in all districts were well-prepared and maintained
2. The baseline data on filarial endemicity was collected in all districts
3. Morbidity survey: Active search of lymphedema and hydrocele cases was done by every district. The line listing of all these cases was also maintained and is in records.

The Logistics of the Drugs

The DEC distribution is the core activity in MDA program. To make drugs available is a significant and integral activity for this work. Moreover, record of previous year consumption, the balance of drug and calculation of present year demand was properly maintained. However, no record on the quality check was recovered.

Impact Assessment

The impact assessment is done by the local authorities to understand the effect of the MDA. The work is the responsibility of the local authorities. This assessment is done by the local authorities after the round of MDA to see the effect. Indicators like MF rate etc., are used to see the before and after conditions. However, no such data was collected in any of the two districts about the impact of MDA by the local authorities.

Information, Education and Communication (IEC)

Under IES activities, posters were displayed, and pamphlets distributed. Apart from it announcement on loudspeaker and programs on the radio were organized. All two districts offices reported to have spent money on preparation and printing of IEC materials such as pamphlets, posters, banners were printed and distributed, and wall paintings were done. Loudspeakers were also used as IEC mode.

At the time of fields visits for verification by the monitoring teams, wall paintings were visible at market and public places with pictures on them. The majority of respondents from both rural and urban area said that they have seen things regarding MDA and filariasis in the form of banner and posters, few of them also reported regarding pamphlets.

The newspaper cuttings were also provided by the health authorities/filarial units to the monitoring teams. These were printed in Hindi. Some health officials had also complained of insufficient funds for IEC activities. In Chhatarpur, a new approach since last year was through SMS regarding MDA through mobile.

Whatever IEC activities are carried out there was very limited information to make the community aware of the possible side effects and why these side effects occur. During the field visits, it was found that at the time of drug distribution health worker are not adequately giving the health education to the recipients, which if was given then coverage could have been better.

Regarding the choice of best source of communication, poster and pamphlets are considered as best source of communication in rural areas, on the other hand, majority of urban population have said TV, radio and house to house communication may be best mode of communication for generating awareness.

Coverage and Compliance

The actual drug compliance is determined by interviewing about 600 family members in each district following the sampling technique against the record in the register maintained at district offices. Maximum Distribution coverage was reported in Chhatarpur (86.94%) district followed by Tikamgarh (83.21%). It was also compared with reported coverage by the district health authorities. Coverage compliance gap also calculated which was found almost more than 10% in each district, which should ideally be zero, so still more and more strengthen efforts are needed to make it zero. Effective coverage was also found to be below targeted, which is 85% for the local elimination of filariasis (Table 1). Lack of awareness was the most common reason reported for the non-compliance followed by improper counseling and absenteeism (Table 2).

Management of Side Effects of DEC

Side effects in reality was not that prevalent as its fear was. Only a minor proportion of the covered population had reported any side effect after ingestion of the drug, and if, so it was mostly nausea and vomiting and fever and sometimes diarrhea.

Only a small proportion was told about the side effects and its management, which was supposed to be told to them at the time of distributing drugs. People preferred not ingesting drugs in front of the health worker. Less than 5% of the population had ingested the drug in the presence of distributor. The side effects were properly recorded only in a limited number of cases. Only a few were given management for side effects.

DISCUSSION

The study noted that overall planning for MDA activity was good in both districts. As required, sufficient number of training is being conducted at every district. Attendance is variable. However, there is no mechanism to monitor and evaluate the quality of trainings. The inter and intra-

Table 1: District wise coverage and compliance of drugs

Name of district	Eligible population (%)	Distribution (coverage) (%)	Coverage reported by district authorities (%)	Drug ingested (compliance) (%)	Effective coverage (%)
Tikamgarh (615)	566 (92.03)	471 (83.21)	82	366 (77.70)	64.66
Chatarpur (620)	590 (95.16)	513 (86.94)	80	384 (74.85)	65.08
Total (1235)	1156	984		750	64.87

Table 2: Reason of non-compliance

Reason of non-compliance	*N*=234	%
Lack of awareness	112	47.86
Improper counseling	45	19.23
Absent at the time of drug distribution	27	11.53
Fear of side effects	20	8.54
Forgot	18	7.69
Others	12	5.12

sectoral coordination was good in both districts. The health education activities were not being done satisfactorily.

There was limited knowledge and awareness about LF and MDA among the community members. Similar findings have been reported from other studies in India.[5,7,8] The local modes of awareness generation were utilized in a rural area and the TV and newspapers for IEC activities in the urban area which had limited penetration in the rural population. These findings differ from a previous study done by Lahariya and Mishra[5] Less than 5% of the population had ingested the drug in the presence of distributor. The side effects were properly recorded only in a limited number of cases. Only a few were given management for side effects.[5]

In order to minimize the transmission of filariasis and to ultimately eliminate it from the country. It is required to have DEC coverage of more than 85%, continuously for 5 years, in endemic areas. However, the major difficulty is in achieving such a high coverage. In our study, the effective coverage was found to be 64.66% and 65.08% in Tikamgarh and Chhatarpur districts, respectively. Which was far below the target needed and laid by for the local elimination of filariasis, i.e., sustained effective coverage of at least 85% for 5 years. Prasad *et al.* found in their study better findings than the present study.[9,10] A study done by Kumar *et al.* in Gujarat, the coverage rate was 85.2% with variation across different areas. The compliance with drug ingestion was 89%. The effective coverage (75.8%) was much below the target (85%) but better than our study findings.[11]

In present study, lack of awareness was the most common reason reported for the non-compliance followed by improper counseling and absenteeism. Godale and Ukarande reported in their study that fear of side effects of drugs (45.38%) as the most common reason for non-compliance followed by lack of awareness about LF.[12]

Finally, LF is an area where limited research is being done in India and other endemic countries. There is an urgent need for operational research to find out the solutions for existing problems in the efforts towards the elimination of LF.

CONCLUSION

There appears an immediate need to strengthen the MDA planning and implementation in these districts. This evaluation is a starking example showing that even a well-thought, well-funded and well-planned program may not succeed if the implementation is poor. The focus should be on providing health education, awareness about the side effects and, a strong inbuilt mechanism for side effect management and the morbidity management to make the LF elimination program successful.

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