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Research Article

EVALUATION OF MASS DRUG ADMINISTRATION (MDA) ACTIVITIES FOR ELIMINATION OF LYMPHATIC FILARIASIS IN TRIBAL AND NON-TRIBAL DISTRICTS OF CHHATTISGARH STATE, CENTRAL INDIA

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ABSTRACT

Background: Since the year 2004, mass drug administration (MDA) is opted as one of the successful strategies to eliminate lymphatic filariasis in endemic areas of India. MDA as a preventive measure will be effective only with satisfactory compliance of the medicines which would be a reflection of committed participation of medicine providers, proper IEC and active participation of beneficiaries. A midterm evaluation was conducted with the objectives to review the progress of MDA activities to recommend mid-term amendments. **Material and Methodology:** A cross-sectional study was conducted in one tribal district (Jashpur) and another non tribal district (Bilaspur) of the Chhattisgarh state. One urban and three rural clusters were selected from each of the district. 174 and 150 households were surveyed from Jashpur and Bilaspur district respectively, where the mass drug administration programme was conducted during the year 2012 to assess the coverage of MDA, its compliance, role of community volunteers, and IEC activities done.

Results: 70.26% respondents in the non tribal District and 41.58% respondents in Tribal district were covered under MDA programme. The Drugs compliance was 63.0% and 35.92% in non-tribal and tribal district respectively. However, the official coverage is said as 88% in nontribal district and 91% in tribal area. The main reason for noncompliance was fear of adverse effects of the allopathic medicines (59%) in the nontribal area while lack of information was the prime reason among respondents (65%) of the tribal district.

Conclusion: The lower coverage and poor compliance was primarily due to poor IEC/BCC in nontribal district where as it was due to lack of information about the distribution of medicines in the tribal district. Proper planning and its implementation is strongly the need of the time for success of the programme.

Keywords: Lymphatic Filariasis, Mass Drug Administration (MDA), Compliance, Coverage, Information, Education and Communication (IEC).

INTRODUCTION

Lymphatic Filariasis (LF) is an important Tropical disease, caused by three species of nematode worm, is the second leading cause of disability worldwide affecting more than 120 million people in 80 countries. It is a major cause of physical and emotional suffering, as well as economic loss¹⁻².

About 64% of global populations who are at risk of LF infection are living in Southeast Asia region. It is estimated that 600 million people are at risk of LF infection in 250 districts across 20 states and union territories in India³.

In tropical and subtropical areas where lymphatic filariasis is well established, the prevalence of the infection continues to increase. Lymphatic Filariasis was classed as one of six infectious diseases to be eradicable by World Health Organization (WHO).⁴ 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 and to train personnel to implement the programme. The main control measures were mass diethylcarbamazine (DEC) administration, anti-larval measures in urban areas and indoor residual spray in rural

areas⁵. Currently, the Global programme to Eliminate Lymphatic Filariasis depends largely on MDA to interrupt the transmission. This strategy is based on the evidence that single annual doses of antifilarial drug DEC with or without albendazole can suppress microfilaraemia for prolonged periods, and the cumulative effect is expected to lead towards the elimination of lymphatic filariasis^{6,7}.

MDA is the most practical and feasible method of controlling lymphatic filariasis. National Health Policy 2002 aims at elimination of transmission and prevention of disability due to LF by the year 2015⁸. In India, Mass Drug Administration of DEC was started on 5th June 2004. Chhattisgarh state has 18 districts with 45% of area covered under forest and one third of its inhabited population is tribal⁹ with 50% districts of state falls under filaria endemic area. Among other health challenges it faces acute shortage of health human resource such as 50% (1193/2365) shortage of general medical doctors, and 50% (2545/5076) shortage of multipurpose worker (male)^{10, 11}. Hence, the study was planned with an objective of assessing the coverage and compliance and other operational issues of MDA of diethylcarbamazine and albendazole under a programme to eliminate lymphatic filariasis in the tribal and nontribal district of state.

MATERIALS AND METHODS

A community based cross-sectional study was conducted after three weeks of MDA campaign activities which was conducted in tribal and non-tribal district of the Chhattisgarh state during May to June 2012. The Bilaspur district was near feasible plain area while Jashpur district is remote, inaccessible and tribal dominant district.

The study was conducted as per the standard guidelines prepared by the National Vector Borne Disease Control Programme. In every district, four clusters (three rural and one urban) of 30 households each were selected. It was ensured that at least 600 people would be covered in a single district for MDA evaluation. For selection of rural sites, on the basis of reported MDA coverage in the last round, all Blocks in a district were stratified into three groups: (i) Block with coverage <50%; (ii) Block with coverage between 50 and 80%; and (iii) Block with coverage >80%. Thereafter, one Block from each category was selected for MDA evaluation. In case, no Block is falling in a particular category, two Blocks from the next higher category were selected. One PHC was randomly selected from the selected block. Then one subcentre was selected from each selected PHC and lastly one village was selected from selected randomly subcentre. Random selection was made by using currency note for random number generation. The household survey in each selected village was conducted covering 30 households, using standard questionnaire developed for MDA evaluation. In urban areas, the list of the wards was used for selection of the cluster. Thereafter, one ward was selected randomly for the evaluation of the programme, using currency note for random number generation.

In the next step, in the selected ward in the urban area, 30 households were covered. The head of the family or other responsible member present at the time of survey was

interviewed. Adhering to the criteria of NVBDCP, pregnant women, children less than two years of age and seriously ill people were excluded from the study. The investigating team constitutes doctors, who conducted interview in the two districts and were already trained in all aspects of this survey. The Officers at block level, peripherial health workers, Mitanins (a community volunteer) and community members were interacted together for survey. In each selected cluster, block CHC was visited and Records were scrutinized to collect information regarding training, IEC and coverage.

Data was collected by Officers and paramedical workers of the Regional office of Health and Family Welfare, Raipur, Chhattisgarh state by house to house visits. The data was retrieved and analyzed using MS excel to calculate the frequencies and proportions.

RESULTS

Age and sex distribution: Majority (66.69%) of the eligible surveyed population in the surveyed districts belonged to the age group of 15-60 years. 484(30.19%) were children from 2 to 14 years of age. 823(51%) of study subjects were males and 707(49%) were females.

MDA Coverage and compliance: In the non tribal district (Bilaspur), a total 871 population was surveyed among 150 houses in urban and rural area. In house to house evaluation survey the drug compliance was 63%. In tribal district (Jashpur), out of 796 total eligible surveyed population, only 286(35.92%) found consumed DEC tablets during MDA. The Coverage and drug compliance was more in nontribal area as compared to in the tribal area. From table 1, it was also seen that the overall coverage of population during MDA in surveyed districts was only 49.54% which is much below than what is expected. The compliance is better in rural area as compared to urban area in surveyed districts. Compliance has been low where drug distributor has just handed over the tablets without explaining the importance of consumption of tablets reducing compliance. This further emphasizes the need for training of drug distributor. At the end of MDA activity the district office reported the coverage of 88 % in nontribal and 91% in tribal district to the government. Approximately 64% of the study subjects in tribal and 37% in nontribal district reported that they actually not consumed both DEC and albendazole tablets. Table 2 shows that there is wide variation MDA drugs compliance in the urban and rural area and found statistically highly significant. They were, either who did not consume at all or consumed inadequate dosage of the tablets, the prime reasons for not consuming the tablet was, fear of drugs 175 (59 %), followed by not present at home 65 (22%) and no information 58 (19%) in nontribal district. However, the main reason in tribal district was due to lack of information 235 (65%), out of the house, no information 96 (26%) and fear of drug side effects 31 (9%). It was also noticed that there was a gross mismatch in the stocks at various CHC in Tribal district.

Involvement of Community Voluntaries and BCC activities: None of respondents were aware of filariasis and the MDA activities in the tribal and non-tribal district. The mass media campaigning or IEC activity was done in urban

and rural areas of nontribal district, while their activities were limited only to health centers. IEC activities and community involvement were poor in tribal district. None of the interviewed beneficiaries had consumed tablets in the presence of the drug distributors. This distribution drive depends only on the anganwadi workers and volunteers at urban area and mitanin of rural area in nontribal district, while nursing students in urban area and health workers and mitanin in rural area in tribal district. The local modes of health education were almost missing, especially in the tribal area. The authorities had used newspapers and banners for IEC activities, which had limited penetration in the rural population.

Line listing of the filariasis during the survey: A line listing of the hydrocele and lymphedema cases was not done by the drug distributor's teams in surveyed areas of both surveyed districts due to lack of proper training of the filariasis and formats. Out of 871 persons in tribal area, 5 were suffering from elephantiasis while only one in the non-tribal district. The knowledge about the disease was poor among the sufferers of lymphatic filariasis in the surveyed area. The morbidity management was totally lacking in the surveyed area.

Adverse effects: only one person suffered from nausea and headache after consumption of drugs in surveyed area. In nontribal district 7 % of surveyed the population thought that these drugs help to get protected from malaria.

Human resource: The state and district had no filaria survey and control unit. The Tribal district had no full time district malaria officer and other supportive staff. There was an acute shortage of the manpower at the peripheral health institute.

DISCUSSION

One of the strategies for elimination of lymphatic filariasis is to achieve 90% coverage in the MDA campaign, which is being conducted every year in the endemic districts since last four to six years. The major challenge with the MDA programme is to sustain this high coverage for a period of at least five years. However, studies have shown that the main limitation in this programme is a comparatively poor coverage of drug distribution and consumption.

In our study the coverage rates varied from 41.58% to 70.26%. Coverage is low in tribal district as compared to nontribal district. The study conducted by various authors in different districts of India showing higher coverage than our study^{12,13,14,15}.

A better compliance rate was observed in our study as compared to the previous study conducted in India, which reports low compliance ranging from 38.8% to 41.6%^{16, 17, 18}. Current findings imply that the present MDA implementation strategy could not achieve the required level more than 85 % of drug consumption in the present scenario.

A high coverage of more than (>85%) in endemic areas has to be sustained for 5 years, which is required to achieve interruption of transmission and elimination of disease from India¹⁹. Though reported coverage by the health department is high, but different studies have shown that effective coverage is not matching with reported figures²⁰.

The reasons for low coverage and compliance in tribal district were improper surveillance, lack of human resources, lack of feasibility and accessibility, poor supervisory mechanisms and low IEC target activities.

In tribal district the main reason for non-compliance was lack of information (65%), while in non-tribal area, it was due to fear of side reactions (59%). B.V Babu et al²¹ found fear of side reactions in 82.1% but Ravish et al²² (15.2%) and Pradeep et al²⁰ (19.4%) found less percentage of respondents to report fear of reaction as a reason. In order to increase the compliance, the drug distributors must ensure that the drugs are swallowed in their presence and mopping-up activities must be undertaken by them to cover people who were absent on day of MDA activity. Training of drug distributors to improve interpersonal communication and effective IEC activities has to be emphasized to improve compliance.

The reported coverage in MDA by the district authorities was much higher than evaluated by the study teams. The probable reason was that the drug distributors handed over the tablets to any one member of the family for all the members of family and did not ensure that the concern person consumes the tablets in front of them, further reducing the compliance. The campaign focuses on a mechanical distribution of tablets rather than the assurance of consumption and internal cross checking of the reports. An intensive information, education, communication and advocacy campaign involving local professional bodies would be beneficial to achieve the desired community compliance.

In the present study, awareness of the community about the disease and the programme was found to be very poor. Similar findings have been reported from studies in India¹²⁻¹⁴ and other countries like Eberhard et al²⁴ in his study at endemic area of Haiti and Indonesia²⁵ reported that only 54% of study subject heard the name filariasis. The amount of awareness about the LF in the population studied does not match with the presence of the disease in the community and the surrounding neighboring areas. There is need of intensive health education campaigns to make the community aware about LF and increase their participation in the programme.

CONCLUSION

For elimination of lymphatic filariasis, high level of coverage (>90%) in endemic areas is essential. The major challenge with MDA programme is to sustain this high coverage for a period of at least five years. However, studies have shown that the main limitation of this programme is a comparatively poor coverage of drug distribution, consumption and IEC activities in tribal and nontribal district. Our study shows that the total coverage of MDA program is 56%, which is less than the national goal of 90% coverage. The planning and implementation of the MDA programme needs to be strengthened by spreading the information related to MDA via locally available means, much before the beginning of the program. Emphasis needs to be given on service, good micro planning, intersectoral co-ordination, teaching and training of health work force and more importantly on the community participation. The intensive health education campaigns about MDA should be conducted in the villages by Panchayat Raj

institutions, private hospitals, and district health authority. These are the key elements for improving coverage and compliance.

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Table 1: MDA 2012 Household Coverage of Tribal and Non-tribal District of Chhattisgarh state

Sr no	Profile	Non tribal District (Bilaspur)	Tribal District (Jashpur)
1	Total Houses surveyed	150	174
2	Total survey population	912	871
3	Total eligible Surveyed population	807	796
5	Total no of eligible covered by drug distributor team during MDA	567	331
6	MDA coverage	70.26%	41.58%
7	Person consume DEC and albendazole tablets	509	286
9	MDA Drug Compliance	63.07%	35.92%

Table 2: Urban and Rural area coverage of MDA 2012

Sr No	Particulars	Non tribal District (Bilaspur)		Tribal District (Jashpur)	
		Urban*	Rural #	Urban*	Rural #
1	Total eligible Surveyed population	179	628	195	601
2	Person consume DEC and albendazole tablets	60	449	22	264
3	% of actual DEC taken	33.5%	71.79%	11.28%	43.92%
* P value < 0.001 (Chi Square = 26.96, df-1)					
# P value < 0.001 (Chi Square = 95.83, df-1)					

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