

Original Article

COVERAGE AND COMPLIANCE OF MASS DRUG ADMINISTRATION FOR ELIMINATION OF LYMPHATIC FILARIASIS IN ENDEMIC AREAS OF SAGAR AND DAMOH DISTRICTS, MADHYA PRADESH

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ABSTRACT

Background: Lymphatic filariasis (LF) is one of the oldest and most debilitating of the neglected tropical diseases. An estimated 120 million people in 73 endemic countries are currently infected with LF, 53 countries are implementing MDA to interrupt transmission. The mass drug administration (MDA) with single dose of diethylcarbamazine (DEC) was carried out for the eligible population in Sagar and Damoh district of Madhya Pradesh to eliminate LF.

Objective: To assess programme in terms of coverage and compliance of MDA against filariasis, reasons for non compliance in Sagar and Damoh district of Madhya Pradesh.

Material and Method: A community based cross-sectional survey was conducted in Sagar and Damoh district of MP. A total of eight clusters, one urban and three rural clusters were selected in each district. The data were collected in pretested Performa and analyzed.

Results: The study includes 240 families with a total eligible population was 1155 in two districts of eight clusters. The compliance rate were 85.52% in Sagar, 42.82% in Damoh district and total compliance was 66.66% observed by us which was below the expected target. The important cause of non compliance was drug distributor not asked to take drug in front of him 50% and in 23% did not received drug or not present at home at the time of drug distribution.

Conclusion: There is urgent need to strengthen MDA programme implementation and effective drug delivery strategies which increase compliance of drug.

Keywords: Mass drug administration, Lymphatic filariasis, Diethylcarbamazine, Coverage, compliance

INTRODUCTION

Lymphatic filariasis (LF) is one of the oldest and most debilitating of the neglected tropical diseases. An estimated 120 million people in 73 countries are currently infected, and an estimated 1.393 billion live in areas where filariasis is endemic and mass drug administration (MDA) is required.¹ Of the 73 countries where LF is currently considered endemic, 53 are implementing MDA to interrupt transmission, of which 12 countries have moved to a post-MDA surveillance phase.¹ GPELF was launched in 2000 with the goal to eliminate LF as a public health problem by 2020. GPELF aims to (i) interrupt transmission using combinations of 2 medicines delivered to entire populations at risk-MDA, and (ii) manage morbidity and prevent disabili-

ty. Preventive chemotherapy is the primary form of control and elimination of LF.²

LF is one of the major public health problems in south-east Asia. Nine of the 11 countries in the region are known to be endemic for filariasis.³ About 65% or two-third of global population who are at risk and 50% of infected people with LF are living in Southeast Asia region.^{3, 4} It is estimated that 554.2 million people are at risk of LF infection in 243 /250 districts across 20 states and union territories in India.⁴ India is committed to eliminate LF by 2015.⁵ To achieve this goal annual mass drug administration of antifilarial drug was launched in 2004 by the Government of India.³

In order to achieve the elimination of LF by 2015 under the National Health Policy, National Filarial Day (NFD) was proposed to be observed every year starting from 2004 in the endemic districts.⁵A high coverage (>85%) in endemic areas, which is sustained for 5 years, is required to achieve for the interruption of transmission and elimination of disease form India.⁶ According to the guidelines, DEC should be administered under supervision to all people excluding children <2 yr, pregnant women and severely ill persons (non-eligible). The recommended DEC dosage is one tablet (100 mg) to children of age 2-5 yr, two tablets for 6-14 yr age group, and three tablets for those > 15 yr of age.³In Pondicherry, MDA programme is successful with 97% coverage rate in 2011 and the microfilaria rate decreased from 0.42% in 2004 to 0.03% in 2008 and 0.00% in 2011.⁷

Out of 48 districts of Madhya Pradesh state of India, LF is endemic in eleven districts. The state had adopted MDA approach for elimination of LF in 2004. The first round of MDA in Madhya Pradesh was carried out on 5 June 2004 with a plan for annual MDA days in the state. It was observed that although the drug should be consumed by the eligible population in the presence of drug distributors, but most of the times, the drug was handed over to the family members or neighbor family for consumption later on. Hence, the present study was done with the primary objective of to assess programme in terms of coverage and compliance of mass drug administration against filariasis, reasons for non compliance in Sagar and Damoh district of Madhya Pradesh.

MATERIALS AND METHODS

Study area: The study areas were one of the filaria endemic districts (Sagar and Damoh) in Madhya Pradesh selected for this study.

Study design: This was a community based cross-sectional survey. The study was conducted as per the standard guidelines prepared by the National Vector Borne Disease Control Programme (NVBDCP).³

Study period: MDA campaign was undertaken on April 22nd, 2012. The House to House Survey to see the coverage and compliance of MDA and to identify reason for non compliance was conducted by study team during month of May 2012.

Study teams: The study team constituted of a two faculty member of Community Medicine Department and three postgraduate student of Community Medicine Department NSCB Medical College Jabalpur, MP for each of the two districts.

Sampling for House to House Survey: In each district, four clusters (three rural and one urban) of 30 households were selected.

For selection of rural sites, three PHC from each district were selected, on the basis of reported MDA coverage of 2008, all Primary Health Centers (PHCs) in a

district were stratified into three groups: (i) PHC with coverage <50%; (ii) PHC with coverage between 50 and 80%; and (iii) PHC with coverage >80%. Thereafter each category of the PHCs, one PHC was selected randomly. In case, no PHC is falling in a particular category, two PHCs from the next higher category were selected. From each of the selected PHC one village was selected randomly for household survey. The household survey in each selected village was conducted covering 30 households; using standard questionnaire. The house for beginning point was selected randomly and moved in a particular direction.

In urban areas, the list of the wards was used for selection of the cluster. Thereafter, one ward was selected randomly for household survey. In that selected ward 30 households were covered.

In this way from each district 120 households were surveyed for the purpose of MDA evaluation. The eligible population did not include pregnant and lactating women, children below two years of age and seriously ill persons.³

The study was cross sectional and does not involve patient intervention methods; hence, ethical issue does not arise.

The household members present at the time of survey were interviewed to collect information regarding MDA with the help of predesigned and pretested questionnaire. The questions included whether person received DEC, whether they consumed, reasons for not received DEC, reasons for not consumed DEC if received, drug distributor persuaded for consuming of drug in his /her presence, side effect of drug etc. The study team also observed Intersectoral co-ordination, availability of action plan, baseline indices, and IEC activities in both district. The data were computed in Microsoft Excel and analyzed

RESULTS

The study includes 240 families of Sagar and Damoh district of MP, 120 families from each district. A 1200 individual of eight clusters (3 rural villages and one urban ward from each district) were served i.e. 630 from Sagar and 570 from Damoh included in the study.

Table 1: Coverage and Compliance of Mass Drug Administration

	Sagar	Damoh	Total
Families surveyed	120	120	240
Population surveyed	630	570	1200
Eligible person in surveyed population	613	542	1155
Persons received tablet	590	460	1050
Coverage Rate	96.2%	84.87%	90.90%
Person who Actual consumed tab	503	197	700
Compliance Rate*	85.52%	42.82%	66.66%

*out of those who received tablet

The eligible persons in served population were 613 in Sagar, 542 in Damoh District and a total eligible population was 1155. Among the served population 17 person from Sagar and 28 person from Damoh, a total of 45 person excluded from studies due to non eligibility i.e. age <2year, pregnancy lactation and sever illness.

It was observed that out of total eligible population, 590 people in Sagar and 460 people in Damoh district, a total of 1050 person adequately received DEC tablets. So the coverage rate was 96.2% in Sagar, 84% in Damoh and a total coverage rate was 90.90%.

The individual who received DEC tablets adequately, only 503 persons in Sagar and 197 persons in Damoh district, a total of 700 persons were consumed the drug. So the compliance rate was 85.52% in Sagar, and 42.82 % in Damoh and a total compliance rate in both districts was 66.66%.

Among the subject who received the drug 87 (14.74%) in Sagar and 263 (57.17%) in Damoh and a total of 350 (33.33%) either consumed inadequately or did not consumed the drug.

Table 2: Reasons for non-compliance of MDA

Reasons	Sagar (n= 110) (%)	Damoh (n=345) (%)	Total (n=455) (%)
Drug given at home but not asked to take	54 (49)	174 (50.43)	228 (50)
Did not received drug	23 (20.9)	82 (23.76)	105 (23.0)
Previous side effect	9 (8.1)	34 (9.87)	43 (9.4)
Fear of side effect	16 (14.5)	21 (6.08)	37 (8.0)
Forget to take	3 (2.7)	17 (4.92)	20 (4.3)
Asked to take it later	5 (4.5)	8 (2.3)	13 (2.8)
Other	0	9 (2.6)	9 (2.0)

The most common reason for not consuming the drug was, drug given at home but drug distributor did not asked to take the drug in front of him in 50% cases, while in 23% did not received the drug at all. Other reasons observed for not consuming the drug were, fear of side effect, asked to take it late, previous side effect and forgot to take.

In this study it was observed that in 28.57% families in Sagar and 9.89% families in Damoh, the drug distributor persuaded for consuming the drug in his / her presence.

It was also observed that only 23.21% families in Sagar and 7.69% families in Damoh, where any member consumed DEC in the presence of drug distributor.

DISCUSSION

A higher coverage (>85%) in endemic areas, which is sustained for 5 years is required to achieved the interruption of transmission and elimination of disease in India.⁸

Of the 240 families of Sagar and Damoh district of MP with a population of 1200 surveyed, the eligible population was 613 in Sagar district, 542 in Damoh district and a total eligible population was 1155.

DEC was distributed to 96.2% in Sagar, 84.87% in Damoh district and a total of 90.90% of eligible population, while compliance rate were 85.52% in Sagar, 42.82% in Damoh district and total compliance was 66.66% observed by us which was below the expected target.

Lahariya and Mishra had reported coverage ranging from 28.82% to 67.9% and compliance of 61.3 to 77.4 % in Madhya Pradesh in MDA in 2007.⁹ A study in Bagalkot and Gulbarga district of Karnataka reported

compliance was 78.6% in Bagalkot district and 38.8% compliance in Gulbarga district.¹⁰

In a study from Andhra Pradesh compliance was reported to be as low as 41.96 % in Krishna district and highest 76.06% in East Gadayri district.¹¹ In 2006 coverage, compliance and effective coverage in Gujrat were reported to be 85.2, 89.0 and 75.8 % respectively.¹² A study in Kerala had observed coverage of 77% and compliance of 39.6 % only.¹³ Babu et al¹⁴ also reported low coverage in Orissa. Nirgude et al was reported coverage rate for MDA 79.7% and compliance rate found to be 43.04% in Nalgonda district of Andhra Pradesh.¹⁵

In another study from rural Pondicherry the coverage, compliance and effective coverage rate were 76.2, 88.7 and 67.6 % respectively.¹⁶

In the present study important cause of non compliance was of drug distributor who not asked to take drug in front of him 50% cases and in 23% cases did not received drug or were not present at home at the time of drug distribution in both districts. Similar reasons for non compliance were observed in Karnataka were locked house, refusal to take medicine. The drug distribution was during day time when the members of household were been to work.¹⁷

In the present study it was also observed that in 28.57 % families in Sagar and 9.89% families in Damoh drug distributor persuaded for consuming of drug in his /her presence. It was also observed that only 23.21% families in Sagar and 7.69% families in Damoh where any member consumed (swallow) DEC in the presence of drug distributor. In study conducted in Pondicherry also, in 96.57% people's drug consumption was not supervised.¹⁶

In most of the studies including present study there was a wide difference in drug distributed and actually

consumed drug. Compliance should be considered as the major criteria during MDA campaign rather than drug distribution, hence during MDA campaign emphasis should be given on consumption of drug in the presence of drug distributor rather than tablet given to household or near by house if the house is locked and reason of non compliance should be identified by drug distributor at the time of MDA campaign and counsel about and also have an opportunity to increase awareness about LF, its mode of transmission.

Other reasons for non compliance in this study were fear of side effects, asked to take it later, previous side effect, forget to take. Nirgude et al was reported in Nalgonda district of Andhra Pradesh that fear of side effect was the most common reason for not consuming drug.¹⁵

Mopping up activities must be under taken by health worker for the person who was not received drug or was not present at the time of drug distribution or house was locked on the campaigning day.

In the present study it was also observed that Intersectoral co-ordination was excellent in both districts. Well action plan were available in both district but implementation was very poor. Baseline indices were not available, proper training to health workers and technicians was not given, IEC activities were limited to paper. Impact indicators were not found in both districts and most of the activities were limited on paper.

CONCLUSION

The study showed that planning was good in both district but implementation was very poor in both district .So there is urgent need to strengthen MDA program me in terms of increased compliance by consumption of drug in the presence of drug distributor rather than tablet given to household or near by house. Reason of non compliance should be identified by drug distributor at the time of MDA campaign and should counsel about. Mopping up activities must be under taken by health worker for the person who does not receive drug, who not present at the time of drug distribution or the house was locked on the campaigning day and to focus on training of workers, IEC activities, and monitoring of MDA campaign.

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