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Original Research Article

A study to assess mass drug administration of DEC for filaria control in district Satna, Madhya Pradesh: a mid term assessment

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ABSTRACT

Background: Lymphatic filariasis is a major public health problem which is caused by Wuchereria Bancrofti and Brugia Malai. The disease is endemic in 250 districts in 20 states and UTs. In India national health policy 2002 envisages elimination of lymphatic filariasis by 2015. Important strategy for elimination of lymphatic filariasis is through annual mass drug administration of single dose of DEC for 5 year or more to the eligible population. Present cross sectional study was carried out to assess drug compliance after mass drug administration of DEC and the factors responsible for poor compliance among the population of Satna district of MP.
Methods: The present study was a cross-sectional study which was carried out in filarial endemic Satna district. In this district 120 houses from 3 CHC & one urban ward was randomly selected. 30 households each from 3 rural and one urban site were interviewed related to MDA for DEC.
Results: Coverage of tablet distribution in Satna was 90.9%. Consumption of drug among the people who received the drug was 87.97%, while the total effective consumption was 79.9%. Drug distributors ensured consumption of drug in only 16.9%.
Conclusions: Focus of MDA is primarily to mere distribution of drug. There is need to give emphasis on consumption of drug, health education, common side effects and its management in order to increase effective coverage rate.

Keywords: Midterm assessment, Mass drug administration, Filaria

INTRODUCTION

Lymphatic filariasis is an infectious disease caused by nematode worm *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*. Adult worms are living in lymphatic vessel of men while their offspring the microfilaria circulate in peripheral blood and are available to infect mosquito vector when they come to feed.[1]

In India also, it has been a major public health problem next to Malaria. It is estimated that 630 million people are at risk of LF infection in 255 districts across 16 states and 5 union territories in India.[2] India launched National Filariasis Control Program (NFCP) in 1955 and it became a part of the National Vector Borne Disease Control Program (NVBDCP) in 2003.[3] National Health Policy 2002, envisages elimination of lymphatic filariasis by 2015.[4] The major constraint of the NFCP was that it did not cover the vast majority of the population at risk residing in rural areas and that the strategy demanded detection of parasite carriers by night blood survey, which is less sensitive, expensive, time-consuming and poorly accepted by the community.[5]

The International Task Force (WHO) has recommended that in mass treatment, Di-Ethyl Carbamazine (DEC) is given to almost everyone in the community irrespective of whether they have microfilaraemia or not, disease manifestations or no signs of infection in the area of high endemicity except children less than 2 years, pregnant women and very sick patients.[6]

The mid-term assessment of drug administration is planned to know the actual situation of programme implementation and its outcome. It has been experienced that the drug distribution is not up to the mark, consumption rate and effective consumption rate are also lower than the reported coverage by health workers/ volunteers and important reason for that is not following the norms that the drug is to be consumed by the eligible population in the presence of drug distributors but on many occasions it was not followed and the same was handed over to the family members for consumption some time later.

For the effective control of filariasis, >65% population of endemic areas should be covered by single dose of diethyl carbamazine citrate.[7] The MDA compliance should exceed 65% to 75% with five to six round of treatment is necessary for elimination.[8] We are primarily focusing on drug distribution but not on actual consumption. The present study was conducted to assess the programme in terms of actual coverage, compliance rates of mass drug administration against filariasis in the district & to report the side effects of DEC if any.

METHODS

Satna district of Madhya Pradesh was assessed for DEC coverage under mid term assessment of MDA.

Study subject

All the eligible peoples present in study area were selected on the basis of exclusion criteria. Pregnant and lactating mother, children below 2 years, seriously ill persons, severely debilitated patient and people of extreme age were excluded from study.

Study technique

This study was conducted during Nov. 2014. Three CHCs from district were selected. As per guidelines CHCs should have been classified in to 3 groups depending upon MDA coverage as CHC with coverage below 50, CHC with coverage between 50-80, and CHC with coverage above 80%. In case there is no CHC in a particular category, two CHCs from the next category may be selected. In each category of the CHC, one PHC should be selected randomly. From each of the selected PHC one village should be selected randomly for household survey. But in district Satna every CHC was shown in more than 80% coverage group, so we randomly chose three CHC in district Satna, and then one village (Sariya Tola, Kamlai and Bela) was chosen randomly from each CHC. In each village 30 households were covered. The detailed questionnaire was used for collection of information regarding MDA. Similarly, in urban areas one ward (Ward No 17) was selected randomly for the evaluation of the programme. In the selected ward 30 households were covered. In this way in whole district 120 households were surveyed for the purpose of MDA evaluation.

Data collection technique and tool

The predesigned questionnaire (provided by Director Health Services, State Health Committee, NVBDCP) was used for collection of information regarding MDA.

Data entry and analysis

Data was compiled, entered in Microsoft Excel and simple proportions were calculated.

RESULTS

In our study total surveyed population were 504. Out of which 494 were eligible for MDA administration and out of eligible population 449 were covered for mass drug administration (Table 1).

Table 1: Distribution of population of surveyed districts.

District Satna	Total population	Eligible population		Population covered (out of eligible)	
		N	%	N	%
Sariya Tola	118	116	98.3	110	94.8
Kamlai	124	123	99.1	120	97.5
Bela	128	125	97.6	110	88
Ward No 17	134	130	97.0	109	83.8
Total	504	494	98.01	449	90.9

Most common reason behind non eligibility for MDA was age less than two years followed by pregnancy and sever illness. Only one person was not covered because of old age (Table 2).

Compliance refers to the actual consumption of drug by the community; DEC was distributed to 449 peoples while it is consumed by only 395 persons which make effective coverage rate of 79.9% while coverage of MDA was 90.89% which is much higher than Effective

coverage rate. Coverage – compliance gap is an area where we can make a significant improvement (Table 3).

Table 2: Reasons for non-eligibility for DEC tablet.

S No.	Reasons	No. (10)
1	<2 years	5
2	Pregnant	2
3	Illness	2
4	Extreme age	1

Fear of side effects or previous experience of side effect (family members & neighbours), drug is hot was the most common reason behind not consuming drug followed by out of house (drug was handed over to the family members and later forget or discarded) and don't trust on quality (don't trust Govt. supply or loose tabs) (Table 4).

Health awareness campaign prior to distribution of drug with the help of mass and local media and prior information of MDA campaign is very important for success of MDA. For increasing effective coverage rate drug distributer should peruse swallowing drug in his presence which was done in only 32.5% house hold and in only 57.5% house hold drug distributer explain importance of drug and other detail related to it.

Table 3: Compliance rate, coverage-compliance gap and effective coverage rate.

District Satna	Eligible Population	DEC given By D/D		Consumed (compliance rate)		Coverage–compliance gap (%)	Effective coverage rate (%)
Sariya Tola	116	110	94.82%	100	90.9%	9.1	86.2
Kamlai	123	120	97.56%	114	95%	5	92.6
Bela	125	110	88%	96	87.2%	12.8	76.8
Ward No 17	130	109	83.84%	85	77.9%	22.1	65.3
Total	494	449	90.89%	395	87.97%	12.03	79.9

Table 4: Reasons for not swallowing drug.

Reason	Rural (n=340)	Urban (n=109)	Total (n=449)
Fear of side effects (Previous experience of side effect (family members & neighbours), drug is hot.	18	16	34
Out of house(Drug was handed over to the family members n later forget or discarded)	7	4	11
Don't trust on quality (don't trust govt supply or loose tabs)	8	15	23
Not perceived importance of drug, not aware	11	6	17

Table 5: Drug distributor's interest and media approach to reach the house holders.

District Satna	DD Persuaded swallowing of drug in his presence		DD Explain importance, & other details regarding prevention & transmission		Prior information of MDA dose, C/I, side effect		Any audio or visual media announcement on MDA	
	N	%	N	%	N	%	N	%
Sariya Tola	11	36.6	20	66.6	10	33.3	5	16.6
Kamlai	15	50	24	80	13	43.3	8	26.6
Bela	8	26.6	15	50	12	40	4	13.3
Ward No 17	5	16.6	10	33.3	8	26.6	12	40
Total (n=120 households)	39	32.5	69	57.5	43	35.8	29	24.1

DISCUSSION

In order to eliminate lymphatic filariasis from endemic area there is need of more than 85% 0f DEC coverage rate for more than 5 years.

Coverage

Total population covered in survey of these 120 households of 3 rural and 1 urban area were 504. Out of population covered, eligible population were 494, while rest 10 people were in the non-eligible group. Out of the eligible population 449 received the drug which make coverage rate of 90.9% in over study area is well above to 85% but effective coverage rate of 79.9% is below the target. Mohan Shinde et al also found coverage of 87.5% in Chhindwara district.[9]

Compliance rate

In our study we found that 87.7% peoples those who received the drug actually consume it. This gape because

of different reason like fear of side effect etc. Bansal Manoj et al also found compliance rate of 80.42 % in their study in Chhindwara and Rewa district of M.P.[10]

Coverage – compliance gap

The gap between the coverage and compliance identifies an area of intervention by motivating people to consume the drug (compliance) made available to them by the health system (coverage). In our study we found coverage – compliance gap of 12.03% in total which is highest in urban area that is 22.1%. CCG as a whole was 11% in a study done in endemic district of Gujarat by Kumar et al.[11]

Effective coverage rate

Effective coverage rate is the end product of coverage of the health system and compliance by community**.** Effective Coverage Rate is 79.9% in total highest in Kamlai village that is 92.6% in lowest in urban area ward no 17 that is 65.3% which is lower than required level of 85%. A 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 in India. Effective coverage rate was 75.8% in Gujarat state according to study done by Kumar et al.[11]

Reasons for not swallowing drug

Most common reason behind non-compliance was fear of side effects or previous experience of side effect (family members and neighbours) drug is hot 7.5% followed by don't trust on quality (don't trust govt supply or loose tabs) 5.1% Not perceived importance of drug 3.7%, not aware and out of house (drug was handed over to the family members and later forget or discarded) 2.4%.

In our study we found that drug distributor persuaded swallowing of drug in his presence in only 32.5% of households, they explain importance & other details regarding prevention & transmission in only 57.5% household and prior information of MDA dose, contraindication, side-effect was only informed in only 35.8% house hold. These were important reasons behind noncompliance in drug consumption.

CONCLUSION

Based on our midterm assessment survey of MDA in Satna district Madhya Pradesh we found that coverage rate of DEC distribution was 90.89%, while compliance rate was 87.97% making effective coverage rate 79.9% and Coverage – compliance gap 12.03%. Fear of side effects or previous experience of side effect (family members & neighbours), drug is hot was the most common region behind this coverage – compliance gap.

Recommendations

Based on the study findings, this gap can be field by proper advocacy for this campaign. Drug distributor strictly peruses swallowing in his after explaining importance, & other details regarding MDA and prevention & transmission of filariasis.

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