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EFFECTIVE IMPLEMENTATION OF MASS DRUG ADMINISTRATION (MDA) FOR FILARIASIS – STILL A LONG WAY TO GO

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ABSTRACT

One of the key strategies to prevent occurrence of filariasis recommended by World Health Organisation (WHO) is Mass drug administration (MDA). To fully control the infection the MDA activity should be carried out for 4-6 years. To evaluate the MDA coverage in Solapur district and to assess the compliance of beneficiaries regarding DEC drug intake. Study was conducted in 3 rural and 1 urban block of Solapur district. Multistage cluster sampling method was adopted in the study and data was collected by means of interview technique using a pre-designed, pre-tested questionnaire after taking written informed consent. The total number of houses surveyed was 120 with a population of 592. Out of this, 304 (51.35%) were male and 288 (48.65%) were female. Although the compliance rate was > 50% (58.8%) with consumption of all three tablets but nearly 1/4th beneficiaries i.e., 24.49% have not taken even a single DEC tablet. The drug compliance was poor in urban population as compared to rural population (83.5% and 63.6% respectively). The coverage was also high in rural area than in urban area (98% and 89.1% respectively). The coverage compliance gap was more in urban area than in rural area (25.5% and 14.5% respectively). The total number of person's swallowed drugs in presence of drug distributor was very less in both urban and rural areas i.e., 14.18% and 16.16% respectively (Overall 15.71%). The Proportion of persons not taken drugs in urban area was relatively more than that of rural areas (36.4% and 16.5% respectively). This is probably due to lack of information regarding filariasis or most of them were out of station at the time of drug distribution or they were on empty stomach. There were 5 persons who developed side effects. Many of them have multiple side effects. There is disparity in coverage and consumption of DEC among urban and rural population due to lack of supervised dosing and lack of knowledge of the community about the disease and the program.

Keywords: *Mass Drug Administration (MDA), Filariasis*

INTRODUCTION

Lymphatic filariasis (LF) is the world's second leading cause of long-term disability. The current estimate reveals that 120 million people in 83 countries of the world are infected with LF parasites and more than 20% of the world's population are at risk of acquiring infection. In India, it is estimated that 554.2 million people are at risk of LF infection in 243 districts (Ghosh *et al.*, 2013).

More than 1.4 billion people in 73 countries are at risk. The number of persons suffering from filariasis globally according to WHO estimation is 120 million out of which 40 million are already disfigured and incapacitated by the disease (WHO, 2013). The major junk of infected persons comes from SEAR region (65%) followed by Africa (30%).

One of the key Strategies to prevent occurrence of filariasis recommended by WHO is Mass drug administration (MDA). To fully control the infection the MDA activity should be carried out for 4-6 years.

The MDA activity in India was launched in 1996 as a pilot project in 13 districts of 7 states covering a population of 41 million. The programme initially was started with DEC only. This coverage increased in 2004 covering 468 million population from 202 districts (Park).

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Aim and Objectives- To evaluate the MDA coverage in solapur district and to assess the compliance of beneficiaries regarding DEC drug intake.

MATERIALS AND METHODS

A cross sectional survey was conducted following Mass drug administration for Filariasis in Solapur district. A team consisting of investigators from Dept. of Preventive and Social Medicine, BJ Govt Medical College, Pune conducted the survey for three days. Multistage cluster sampling technique was used to select sample for the survey.

According to the Guidelines of Government of India, three blocks, one from >80% coverage, one from 50% to 80% coverage and one from <50% coverage in the rural areas and one municipality (urban) ward were to be selected randomly (Guidelines for filariases control (Elephantiasis) elimination, 2009). So, 3 PHCs from 3 different talukas (clusters) from Solapur district were selected. One sub centre from each PHC was later on selected for the survey. One village from each sub-centre was selected and 30 houses from that village were selected randomly. The first house was selected randomly and the remaining houses were selected continuously from that first house. Suppose the house was locked than adjacent house was selected. One ward from urban area was selected randomly and from that 30 houses were selected randomly from Solapur district. So, a total of 120 houses were selected from the district for survey (From 3 villages and 1 urban ward) and data was collected by means of interview technique using pre-tested, pre-scheduled questionnaire. All Children of <2 yrs of age, Pregnant women and Patients who were seriously ill were excluded and all those who were willing to participate were included in the survey.

RESULTS

Table 1: Back ground characteristics

Sex	Rural (%)	Urban (%)	Total (%)
Male	239 (52.13)	65 (48.51)	304 (51.35)
Female	219 (48.87)	69 (51.49)	288 (48.65)
Total	458 (100)	134 (100)	592 (100)

The total number of houses surveyed was 120 (30 families from each cluster chosen randomly). Total Population surveyed was 592 out of which 304 (51.35%) were male and 288 (48.65%) were female. The numbers of beneficiaries interviewed were 179 and total numbers of beneficiaries present in family were 592.

Table 2: DEC Tablet consumption pattern

Sex	Number of persons consumed tablets				
	0 Tab (%)	1 Tab (%)	2 Tabs (%)	3 Tabs (%)	Total (%)
Male	64(48.12)	1(0.75)	14(10.53)	54(40.60)	133(100)
Female	81(17.65)	7(1.52)	81(17.65)	290(63.18)	459(100)
Total	145(24.49)	8(1.35)	95(16.05)	344(58.11)	592(100)

There were 145 persons who have not taken drug during MDA activity. 8 Persons have taken 1 tablet. 95 have taken 2 tablets and 344 have taken all three tablets. Even though compliance rate is >50% (58.18%) with consumption of all three tablets nearly 1/4th beneficiaries i.e., 25.49% have not taken any tablet.

Table 3: Coverage compliance rate

Place of Residence	Eligible Pop	DEC given by DD	Tablet Consumed	% of CCG*	Effective coverage rate
Rural	458	449 (98.0%)	375 (83.5%)	14.5%	81.8%
Urban	134	118 (89.1%)	75 (63.6%)	25.5%	56.7%

* Drug Distributer; ** Coverage – Compliance Gap

The drug compliance was poor in urban population (63.6%) as compared to rural population (83.5%). The coverage was also high in rural area than in urban area (98% and 89.1% respectively). The coverage compliance gap was more in urban area (25.5%) than in rural area (14.5%). The effective coverage was

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calculated as the product of Drug coverage and compliance. CCG (compliance coverage gap) was calculated as the difference between drug coverage and compliance (Ghosh *et al.*, 2013).

Table 4: Distribution of beneficiaries who swallowed tablet in front of DD as per place of residence

Residence	Consumed tablets in front of DD (%)	Total Population
Rural	74 (16.16)	458 (100)
Urban	19 (14.18)	134 (100)
Total	93 (15.71)	592 (100)

The total number of persons swallowed drugs in presence of drug distributor were very less in both urban and rural areas i.e., 14.18% and 16.16% respectively (Overall 15.71%).

Table 5: Reasons of beneficiaries for not swallowing drugs

Reason	Rural	Urban
No information about LF/MDA	22	32
Patient were on empty stomach /Fasting	21	3
Fear of Side effects of drugs	11	0
Feeling that why to take DEC when they are not suffering from LF	19	17
Complication of Previous Year MDA	2	0
Out of station	16	2
Total	91	54

The Proportion of persons not taken drugs in urban area was relatively more than that of rural areas (40.30% and 19.87% respectively). Majority of reasons for not taking drugs were lack of knowledge about Lymphatic filariasis and they were on empty stomach. Fear of drugs was more commonly observed in rural areas as compared to urban area. Many people, both from rural and urban areas felt that there was no need to take DEC tablet as they were not having any disease.

Table 6: Distribution of Side-effects experienced

Side effects	Rural	Urban
Nausea and Vomiting	4	4
Fainting attack	3	3

There were 5 people who experienced side effects. All had taken home remedies and not visited health care provider for taking treatment for side effects.

DISCUSSION

Filariasis is a disease that is amenable to eradication. So, adequate measures taken to control the disease can eradicate it. One important measure in the path of eradication of Lymphatic filariasis is “Mass Drug Administration”. To eliminate filariasis successfully MDA should be implemented in >85% of population in endemic areas and must be sustained for 5 years (Ghosh *et al.*, 2013).

The survey was conducted in 3 rural and 1 urban area of solapur district which were selected randomly. Total number of beneficiaries interviewed for the survey were 179 from 3 rural and 1 urban cluster. The total number of beneficiaries from selected houses was 592 out of which only 450 beneficiaries consumed tablets. The overall percentage of consumption was 76.01%. This coverage was lower than that of Gujarat MDA where the coverage of eligible population was 85.2% (Kumar *et al.*, 2008). Findings were somewhat similar in study conducted by Patel PK where the overall compliance rate in Bagalkot district

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was 78.6% but it was less in Gulbarga district (38.8%). The prime reason for noncompliance was fear of side effects (Patel, 2012).

In another study conducted in Orissa by Basu and Khar it was found that the overall coverage rate was 67.05% and the compliance was 41.57% which was lower than that of our study.

The consumption was more in rural population as compared to urban Population (83.5%- rural and 63.6%- urban). This was similar to the study conducted by Ghosh *et al.*, (2013) in west Bengal but overall consumption was more in their study as compared to our study conducted at solapur (Urban – 90.7% and rural – 95.7%) (Ghosh *et al.*, 2013).

The number of beneficiaries who swallowed drugs in presence of drug distributor was somewhat similar. i.e., 16.16% from rural and 14.18% from urban respectively. This was similar to the study conducted by Santanu ghosh in West Bengal, which showed that 72.6% of beneficiaries did not consume tablets in their presence and were told to take the tablet at night after dinner (Ghosh *et al.*, 2013).

The main reasons given by the beneficiaries for not swallowing drugs in presence of drug distributor were no information of LA/MDA/DEC (Rural population- 22, Urban-32), people were on empty stomach (Rural – 21, Urban -3), Fear of side effects of drugs (mainly in Rural population- 11, Urban-0), Not having disease, so no DEC required (Rural population- 19, Urban-17), people were Out of station at the time visit of MDA drug distributor.(Rural -16,Urban-2) and Complication during previous year MDA distribution (Rural-2).

Fear of side effects was most common reason encountered in the study conducted in 24 paraganas, west Bengal which was 36.8% (; Ghosh *et al.*, 2013). In another study conducted by Karmarkar *et al.*, (2011) the major reason for not consuming drugs were no definite reason (25.94%), Fear of side effects(20.15%), No information about LF/MDA (16.88%) and out of station (14.61%) (Karmakar *et al.*, 2011). Out of all beneficiaries who consumed tablets, only 5 experienced side effects because of drugs and all 5 belonged to rural areas. The major symptom obtained from MDA drug consumption was Nausea, vomiting and Fainting attack. Similar types of side effects were encountered in the study conducted by ghosh et al. and the side effects were vomiting (2.3%), dizziness (0.6%) and fever (0.2%) and other side effects (0.9%) (Ghosh *et al.*, 2013). The study conducted by Karmarkar *et al.*, (2011) in West Bengal also showed similar results. In their study out of 6 people who developed side effects mainly suffered from nausea, vomiting and dizziness (Karmakar *et al.*, 2011). All the household members were aware about the nearest treatment facility centre for treating side effects of DEC but none had turned out to receive any treatment from these health care facilities.

Conclusion

Nearly 1/4th of beneficiaries out of total population had not taken DEC tablet. Only 14.18% in Urban and 16.16% in rural population have taken drugs in presence of drug distributor. This shows improper campaign as this is only confirmatory way regarding DEC intake. Moreover the drug distributors have not distributed drugs to all beneficiaries as indicated by compliance-coverage gap (14.5% Rural and 25.5% Urban) which signifies the scope of improvement in work by health works in drug distribution.

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