

Original Research Article

An evaluation study of mass drug administration of DEC tablet in a North-Eastern district of Andhra Pradesh

Satyanarayan Dash*, Aurobindo Samantaray

Department of Community Medicine, MIMS Medical College, Nellimarla, Vizianagaram, Andhra Pradesh, India

Received: 26 April 2017

Accepted: 24 May 2017

***Correspondence:**

Dr. Satyanarayan Dash,

E-mail: drsndash@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The programme of mass drug administration for elimination of lymphatic filariasis is unique in its strategy that one dose of DEC with or without albendazole has been found to be capable enough to eliminate the load of filariasis worms which might have been built up over a period of one year in the people. So all attempts are really made in filarial endemic areas to administer DEC and albendazole to eligible population for the above purpose. The objective of the study were to review the progress of activities of single dose DEC mass administration in the selected district, make assessment of program implementation and recommend further course of action

Methods: A cross – sectional study was done in Vizianagaram district of AP State from 15th March to 15th June 2016. All the PHCs were stratified into 3 groups depending on MDA 2015 coverage. The three categories of the PHCs are identified according to high coverage, very high coverage and very high coverage of DEC consumption. Thus three PHCs and an urban area were selected. Clusters of 30 houses from one village of each PHC and one ward of urban area with a total of 120 households were selected. One respondent from each house was interviewed for the purpose.

Results: The age and sex wise distribution of study population for evaluation of MDA in urban area is 55.2% males and 44.8% whereas in rural area it was 54.4% males and 45.6% females. The age and sex distribution of respondents of MDA 2015 DEC evaluation study in urban area was 6.7% males and 93.3% females whereas in rural area it was 14.4% males and 85.6% females.

Conclusions: The evaluation study of MDA on DEC clearly shows that there has been overwhelming success in administration and consumption of the drug DEC during MDA activity of 2015.

Keywords: MDA, Lymphatic filariasis, DEC tablet

INTRODUCTION

The programme of mass drug administration (MDA) for elimination of lymphatic filariasis (ELF) is unique in its strategy that one dose of DEC Tab with or without Albendazole has been found to be capable enough to eliminate the load of filariasis worms (adult and larval forms) this might have been built up over a period of one year in the people.¹ So all attempts really made in filarial endemic areas to administer DEC and albendazole to

eligible population for the above purpose during a period of 3 consecutive days in a year carries a lot of public health importance.^{2,5} But there appears to be a gap between drug distribution and real consumption of the drug in each MDA programme although by now a number of such MDA programmes have been conducted. If drug consumption compliance is not optimum i.e. 90% then ELF may not be successful and disabling morbidity would continue to persist in the community.⁶

So assessment of MDA, programme in the district of Vizianagaram, AP State has been taken up to know the level of success not only with regard to DEC consumption compliance but also of training of personnel engaged in MDA, awareness or publicity activity at various levels, side effects of the drug if any and practice of hygienic care of lymphatic filariasis cases etc.

Objectives

- 1) To review the progress of activities of single dose DEC mass administration in the selected district.
- 2) To make independent assessment of the programme implementation with respect to process and outcome indicators.

METHODS

Study design

Cross-sectional study.

Study area

Three rural and one urban area of Vizianagaram district.

Study population

All the PHCs were stratified into 3 groups depending on MDA 2015 coverage. The three categories of the PHCs are identified according to high coverage (85-90%), very high coverage (90-95%) and very high coverage (95-100%) of DEC consumption. Thus three PHCs and an urban area were randomly selected from the high

coverage areas. Clusters of 30 houses from one village of each PHC and one ward of urban area with a total of 120 households were selected for the study. One respondent from each house who is available and volunteered to answer at the time of visit by the investigator was interviewed for the purpose.⁶

Study instrument

Standard questionnaire available in the Operational guideline of the MDA of DEC was used.

Study period

Three months (15th March-15th June, 2016)

Data analysis

Collected data was entered in MS Excel and analysed using SPSS version 21.

Statistical tests

Results are shown in the form of percentages and projected as tables.

RESULTS

The Table 1 for rural Vizianagaram shows that the male and female composition is (54.4%) and (45.6%) respectively. The ineligible population i.e. below 2 years is almost negligible (1.6%). Majority (81.3%) of the rural study population belongs to the age Group 15 years and above.

Table 1: Age and sex wise distribution of study population.

Age group	Rural Vizianagaram			Urban Vizianagaram			Total Vizianagaram		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<2 years	03	03	06 (1.6%)	02	02	04 (3.4%)	05	05	10 (2%)
2-4 years	13	05	18 (4.7%)	04	03	07 (6.1%)	17	08	25 (5.1%)
5-14 years	29	18	47 (12.4%)	13	06	19 (16.4%)	42	24	66 (13.3%)
>15 years	161	147	308 (81.3%)	45	41	86 (74.1%)	206	188	394 (79.6%)
Total	206 (54.4%)	173 (45.6%)	379 (100%)	64 (55.2%)	52 (44.8%)	116 (100%)	270 (54.5%)	225 (45.5%)	495 (100%)

It is observed from the Table 1 that there were 116 persons in the Urban Vizianagaram who received DEC Tablets and they were the residents in the 30 households studied in the ward No. 14 (Gollaveedhi area) of Urban Parvathipuram. Out of the total urban population there were 04 (3.4%) persons below the age group of 2 years. Of course they were not eligible to receive DEC tablet. Maximum numbers of people were in the age group 15 and above (74.1%). According to sex wise distribution

males were 55.2% and females were 44.8% in the urban Vizianagaram.

In the study population it is observed that the age and sex wise composition with regard to urban and rural areas more or less are similar.

From the above table it is found that total ineligible population (<2 years) is 2.02%, whereas the majority of the population are coming under the age group 15 years

and above (79.6%). The sex wise composition of the study population reveals that males and females constitute of 54.5% and 45.5% respectively (Table 1).

Table 2: Age and sex wise distribution of respondents.

Age group	Rural Vizianagaram			Urban Vizianagaram			Total Vizianagaram		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
15-29 years	02	12	14 (15.6%)	0	12	12 (40%)	02	24	26 (21.7%)
30-59 years	11	59	70 (77.8%)	02	14	16 (53.3%)	13	73	86 (71.7%)
>60 years	0	06	06 (6.6%)	0	02	02 (6.7%)	0	08	08 (6.6%)
Total	13 (14.4%)	77 (85.6%)	90 (100%)	2 (6.7%)	28 (93.3%)	30 (100%)	15 (12.5%)	105 (87.5%)	120 (100%)

Table 3: Physical verification of DEC tablets during evaluation survey.

Criteria	Rural Vizianagaram	Urban Vizianagaram
1. No. of DEC tablets given	1034	297
2. No. of DEC tablets recovered	NIL	NIL
3. No. of persons taken full dose	372	110
4. No. of persons taken partial dose	NIL	NIL
5. No. of persons not taken DEC tablets	NIL	NIL
6. No. of albendazole tablets given	372	110
7. No. of albendazole tablets recovered	NIL	NIL
8. No. of persons taken Albendazole full dose	372	110
9. No. of persons not taken Albendazole tablets	NIL	NIL

Table 4: Assessment about drug administration.

MDA administration activity	Rural Vizianagaram	Urban Vizianagaram
1 If Any Reservation on Drug Administrator, specify	All 90 had no Reservation on DA	All 30 had no Reservation on DA
2 If swallowed tabs in presence of DA, If no. why?	Yes all 372 persons swallowed tabs	Yes all 110 persons swallowed tabs
3 If DA Explained about ELF and Transmission of Lf	Yes	Yes

Table 5: Assessment of side effects of DEC and albendazole tablet consumption.

Side effects	Rural Vizianagaram (N = 372)	Urban Vizianagaram (N = 110)
1 Any side effect of Drug	Nil	Nil
2 If Got any remedial drug	Nil	Nil
3 If Received any treatment for ailment before side effects of drugs	Nil	Nil

Table 2 depicts that the age and sex wise distribution of respondents of rural Vizianagaram in the above 3 PHCs together showed that males constituted of 14.4% as against females comprising of 85.6% of the total. As regards their age it is observed that majority belonged to the group 30-59 years comprising 77.8% of the total and age group 60 Years and above constituted the lowest group being 6.6% of the total and age group 15-29 years formed 15.6% of the total.

Further the Table 2 reflecting sex wise composition of Urban respondents, it is observed that males composed of

6.7% and females were 93.3% of the total and 53.3% of the respondents were in the age group of 30-59 Years, while senior citizens were 6.7% of the total. Age group 15-29 years contributed 40% to the total of respondents.

In comparison to rural and urban areas the proportion of female respondents are more in urban (93.3%) than in rural areas (85.6%).

For the total population Table 2 shows that male and female composition is 12.5% and 87.5% respectively. As regards the age group it is seen that majority (71.7%) of

the respondents belong to the age group 30–59 years, whereas 15–29 years constituted of 21.7% and 6.6% were >60 years of age (Table 2).

It is observed in Table no. 3 that in rural Vizianagaram number of DEC tablets distributed among 378 persons in 90 households surveyed in the 3 villages of 3 PHCs were 1034 Tablets and in the Urban Parvathipuram for the 30 households number of DEC tablets distributed were 297 tablets among 116 persons. In both the areas all the persons have consumed their respective full doses of DEC tablets. With regard to albendazole tablets it is observed that 372 tablets were distributed to 372 persons in the surveyed areas of rural Vizianagaram and 116 no. of albendazole tablets were distributed among 116 persons in the survey area of Urban Parvathipuram. All have consumed the tablets. So neither DEC nor

albendazole tablets were recovered in the survey areas during MDA evaluation study (Table 3).

Table 4 shows that, questions were asked to respondents regarding any reservation on drug administration. It is surprising that no respondent reported any reservation against Drug Administrators. That means, there has been cent percent acceptance of Drug Administrators among the people in the survey area. Further all persons have swallowed the tablets in presence of the Drug Administrators. This means that people have prior knowledge of the procedure of taking the drugs under MDA of DEC. It has come out that the Drug Administrators have explained them about the programme of elimination of lymphatic filariasis and transmission of the disease of lymphatic filariasis (Table 4).

Table 6: IEC activities during MDA of DEC.

IEC	Rural	Urban
1. When Respondent		
a) Heard about MDA	Before 2 days – 90	Before 2 days – 30
b) From whom / source	ANM - 37	ANM – 30
	ASHA-90	ASHA – 30
	AWW - 41	AWW – 3
	TV-18	TV – 21
	NP-3	NP – 3
2. If read / seen any banner, poster, newspaper advertisement, handbill, mike announcement, drama, street play on MDA	Radio - 5	
	Poster -53	Poster – 14
	Banner – 46	Banner – 18
	NP – 3	NP – 3
	Hand Bill - 26	Hand Bill – 19
3. Which one most effective	Poster – 45	Poster – 12
	Banner-34	Banner – 11
	NP – 1	
	Hand Bill – 10	Hand Bill – 7

With regard to side effects of the drugs depicted in Table 5 it is observed that under the MDA Programme there has been no report of side effects of drugs among the persons. So there has been no need for any remedial measure of drug for the same. Further no person has come out with any positive answer of receiving any treatment for ailments before side effects of drugs. In fact there has been no history of any side effect observed due to consumption of the drugs under MDA. That means tolerance is very good (Table 5).

Table 6 provides the data on IEC activities carried out during MDA of DEC in the District of Vizianagaram. Regarding IEC activities the respondents were asked certain questions to a certain if these activities were performed or not. It is observed that in rural Vizianagaram that out of 90 respondents all persons (100%) reported to have heard about MDA 2 days before the MDA activity. In the urban Vizianagaram (Parvathipuram) out of 30 respondents all persons

(100%) heard about MDA 2 days before the actual date of MDA.

This shows that IEC activities in various forms have been materialized so that people have come to know it earlier to the actual date of MDA. This has helped in their being available on the date of MDA for consumption of DEC and albendazole. So it added to the success of the programme.

The source of information about MDA were reported to be multiple in both rural and urban areas of the district. In rural areas majority of the respondents came to know about MDA from ASHA, AWW and ANMs. Some of them also have learnt it from television, radio and newspapers. But in urban areas all respondents reported to have known about MDA from ASHA and ANM invariably. A sizable number also learnt it from television. Newspaper as a source of information was mentioned by a very few respondents.

The IEC materials used during MDA activity in both rural and urban areas were seen/ read by the respondents to a variable extent. They have come across poster, banner, newspaper and hand bills as IEC material during the above period.

Question about the most effective IEC material was asked to the respondents. In the rural Vizianagaram out 90 respondents the most effective IEC material was poster for 45 (50%) persons, banners for 34 (37.8%) persons, newspaper for 1 (1.1%) persons and hand bill for 10 (11.1%) persons.

In the urban area, out of 30 respondents the most effective IEC material was furnished in different ways as follows: poster for 12 (40%) persons, banner for 11 (36.7%) persons and hand bill for 7 (23.3%) persons (Table 6).

DISCUSSION

In the present study basing on DEC tablet consumption coverage three PHCs and one urban area were selected. From each of these PHCs one village and one street from the urban area were taken up. 30 households in a cluster from each of the areas were visited. Data was collected from one respondent of each household. Similar method has been adopted by Singh, et al in Madhya Pradesh during 2010.⁷

Sex wise distribution of the study population of this study was found to be 54.5% for males and 45.5% for females. Whereas the study carried out by Patel in in Bagalkot and Gulbarga Districts of Karnatak in the year 2010 reveals that the male and female composition was 49.5% and 50.5% for Bagalkot and 46.9% and 53.1% for Gulbarga district.⁶

In this study about 98% of the study population were eligible for DEC tablet consumption. Perni et al in their study carried out in Goa for the years 2006, 2007, 2008 and 2010, found that eligible population to receive DEC tablet were around 96.08% to 98.52%.⁸ But Singh et al in their study found that the eligible population in various clusters varied between 90.2 and 94.4%.⁷

Further it is observed in the present study that 93.4% of the respondents were in the age group 15–59 years. Whereas majority of the respondents were in the age group of 15–59 years (62.7% in Bagalkot and 63.9% in Gulbarga districts, respectively); as per the study conducted by Patel during the year 2010.⁶

Regarding the compliance of DEC and albendazole tablet consumption, the present study reveals that there is 100% compliance in both the rural and urban areas. But the study conducted by Singh et al in Madhya Pradesh during 2010 shows the compliance rates were 77.8% in urban area and 92.9% in rural area.⁷ Also in the study conducted by Patel in Karnataka, it was found that

approximately 79% in Bagalkot and 39% of the study subjects in Gulbarga district consumed both DEC and albendazole tablets.⁶ Further in the study conducted by Anil NS in Gulberga, Karnatak during 2011, it is found that 72.65% had actually consumed the adequate dosage of DEC plus albendazole tablets.⁹ Compliance of DEC and albendazole tablet intake is found to be less during the years 2010-11, in Karnatak and Madhyapradesh but in Vizianagaram district of Andhrapradesh this compliance is cent percent, which may be due to the effect of successive IEC activities, increased awareness and participation of the people coupled with perfect implementation of the action plan by the Health functionaries.

In the present study, it has clearly come out that all the respondents knew about the MDA programme 2 days before its onset and all of them got information about MDA from ASHA. ANM and AWW were the other informants in this regard. In the study conducted by Patel in Karnataka it was found that, among the respondents 33.8% in Bagalkot district and 24.3% in Gulbarga district had the knowledge of MDA programme. Majority of them got the information from health workers, 61.5% in Bagalkot district and 74.3% in Gulbarga district).⁶

For majority of the respondents in the rural and urban Vizianagaram, posters and banners were the main source of information whereas in the study conducted by Rajkumar et al, in the Medak district of Telengana state it was observed that 79.3% of respondents were aware of MDA through banners / posters only.¹⁰

With regard to the choice of most effective IEC materials in the MDA programme, it is observed in the present study that, posters and banners were the most effective IEC materials in both the rural and urban areas of the Vizianagaram district. But the study carried out by Marskole et al in Tikamgarh and Chhatarpur districts of Madhya Pradesh reveals that the choice of best source of communication was poster and pamphlets in rural areas and TV, radio and house to house communication in urban areas.¹¹

CONCLUSION

MDA of DEC tablets has been well accepted by the people and no side effects have been reported by the study population. Awareness about the benefit of the programme set by the district is well set in the minds of the people. The consumption of the DEC in presence of the drug distributor was fool-proof and there has been no postponement of the intake due to the any reason. Training of medical officers, staff and volunteers at different levels were also quite successful. Level of knowledge about MDA is found to be quite high among the respondents. IEC activities conducted for the programme were also up to the mark. It is concluded from the above study that, for effective elimination of

lymphatic filariasis the MDA programme should continue for a few years more.

ACKNOWLEDGEMENTS

The authors are grateful to the District Medical and Health Officer, Vizianagaram and the District Malaria Officer, Parvathipuram, AP for the help and co-operation extended by them towards carrying out the evaluation survey on MDA of DEC tablet in the Vizianagaram district, AP. The support provided by the Dean and Principal, MIMS Medical College, Nellimarla is gratefully acknowledged. The guidance of the Professor and Head of the Department of Community Medicine, MIMS for smooth conduct of the survey is praise worthy.

Funding: For the survey grant was received from the Director of Public Health and Family Welfare, Government of Andhra Pradesh

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Government of India, MOHFW. Guidelines on elimination of lymphatic filariasis in India. 2009: 80–87.
2. Park K. Park's Text Book of Preventive and Social Medicine. 24th Edition. Jabalpur. 2017: 439.
3. Suryakantha AH. Community Medicine with Recent Advances. 4th edition. 2017: 904–906.
4. WHO: 2010. Regional strategic plan for elimination of Lymphatic Filariasis 2010: 5.
5. Kishore J. National Health Programmes of India, 12th edition, 2017: 415.
6. Patel PK. Mass Drug Administration Coverage Evaluation Survey for Lymphatic Filariasis in Bagalkot and Gulbarga Districts. Indian J Community Med. 2012;37(2):101–6.
7. Singh S, Patel M, Kushwah SS. An evaluation of mass drug administration compliance against filariasis of Tikamgarh district of Madhya Pradesh- A household-based community study. J Fam Med Primary Care. 2013;2:178-81.
8. Perni SG, Motghare DD, Ferreira AM, Perni SS, Vaz FS, Kulkarni MS, et al. Evaluation of mass drug administration for elimination of lymphatic filariasis in Goa, India. Int J Community Med Public Health. 2015;2(3):259-62.
9. Anil NS. Assessing Coverage of Mass Drug Administration against Lymphatic Filariasis in Gulbarga District, Karnataka. Int J Med Public Health. 2012;2(3):25–8.
10. Rajkumar PS, Pandve TK, Nagaiah Tajmul G Bansode A, Inamdar NS. An Operational Research on Annual Mass Drug Administration (MDA) For Elimination of Lymphatic Filariasis in Medak District, Telangana. IAIM. 2016;3(7):239-44.
11. Marskole P, Rawat R, Jain S. Mid Term Assessment of Mass Drug Administration for Elimination of Lymphatic Filariasis in Tikamgarh and Chhatarpur Districts of Madhya Pradesh, India. Int J Sci Stud. 2015;3(4):131-5.

Cite this article as: Dash S, Samantaray A. An evaluation study of mass drug administration of DEC tablet in a North-Eastern district of Andhra Pradesh. Int J Community Med Public Health 2017;4:2406-11.