



Original Research Article

Evaluation of Mass Drug Administration Programme for Elimination of Lymphatic Filariasis in Nalgonda District of Telangana

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ABSTRACT

Background. Lymphatic filariasis is an important public health problem in India. Nalgonda district of Telangana is one of the endemic districts where Mass Drug Administration programme is undertaken every year to eliminate lymphatic filariasis. The present study was undertaken to evaluate percentage of coverage and compliance rates of the programme during December 2014 and study reasons for non-compliance.

Materials and Methods. The guidelines of National Vector Borne Disease Control Programme was used to select a total of 120 households from three villages and one urban ward using three stage random sampling. Each household was visited by a team and data was recorded on structured questionnaire. Data was compiled on Windows spreadsheet and analyzed using SPSS software version 19.

Results. The study population consisted of 542 individuals from 120 households, out of which 537 were eligible for mass drug administration. The study revealed that coverage rate, compliance rate and effective compliance rate were 84.05%, 76.39% and 64.20% respectively. 'Fear of side effects', 'unaware of the benefits', 'forgot to take medicines' and difficulty in giving tablets to children were main reasons for non-compliance. Side effects were reported by only 1.81% of cases.

Conclusion. The study reveals that, in addition to upgrading education, information and counseling activities to improve compliance rates, the programme managers at all levels must ensure up gradation of coverage rates by involving more human resources, supervision and incentive linked to work-output.

Key Words: Lymphatic Filariasis, Mass Drug Administration, Nalgonda District, Coverage Rate, Compliance Rate.

INTRODUCTION

Lymphatic Filariasis (LF), commonly known as elephantiasis, is a mosquito-borne neglected tropical disease. [1] Infection occurs usually in childhood but the visible manifestations of the disease appear later during adult life. The acute episodes of the disease cause temporary

disability, whereas chronic lymphatic filariasis leads to permanent disability and disfigurement. World Health Organization (WHO) estimates that 1.4 billion people in 73 countries are threatened by LF, 120 million are infected and 40 million are disfigured and incapacitated by the disease. [2] Considering significant public

health importance of the disease, and in response to World Health Assembly Resolution 50.29, WHO launched its Global Programme to Eliminate Lymphatic Filariasis (GPELF) in 2000 with the aim of eliminating the disease as public health problem by 2020. [3,4]

LF is a public health priority in India. It is estimated that 600 million people residing in 250 endemic districts in 20 states are 'at risk' of infection. Surveys have indicated that India has 0.8 million cases of lymphoedema and 0.4 million of hydrocele. [5] National Health Policy of India (2002) has set the goal of elimination of LF (ELF) in India by 2015. [6] Elimination means that LF ceases to be a public health problem and will be measured by microfilaria carrier rate of less than 1%, and children born after initiation of ELF to be free from circulating antigenaemia. To achieve this goal the National Task Force recommended the strategy with two major thrust areas i.e. (a) transmission control by administration of annual single dose of anti-filarial drugs i.e. diethylcarbamazine (DEC) and albendazole called Mass Drug Administration (MDA), and (b) disability prevention and management of individuals who already suffer from the disease. [7]

The concept of MDA is to approach every individual in the endemic districts and administer anti-filarial drugs once every year. As the longevity of adult worms is approximately 5 years, repetition of annual dose for at least 5 years with minimum 85% effective compliance should achieve the objective. [7] Hence, the quality of MDA programme in the community as measured by coverage and compliance rates is important for success of the elimination programme.

The present study was undertaken to study the coverage and compliance rates, and identify reasons for non-compliance during the annual MDA conducted during

December 2014 in Nalgonda, an endemic district of Telangana.

MATERIALS AND METHODS

Annual MDA was undertaken in Nalgonda district on 14 December 2014. As per the programme directives, house to house visits were made by drug distributors (DD), and DEC and albendazole were administered to the eligible population. Children under 2 years, pregnant women and severely ill persons were excluded from the MDA programme. The DD were instructed to persuade the eligible population to consume tablets 'on the spot' and avoid taking tablet on empty stomach. The DD were instructed to keep record of name of head of the family, number of tablets distributed to each household, and reason for not acceptance.

The present study for evaluation of MDA was carried out by the authors. The evaluation was conducted as per NVBDCP guidelines i.e. by selecting 120 households in four villages (called clusters) through multi-stage random sampling. In first stage Primary Health Centers (PHCs) were selected, while second stage was undertaken to select three villages in rural areas, and one ward in urban areas falling within the jurisdiction of selected PHCs. The third stage was undertaken to randomly select households in identified villages.

Data was collected by four teams, each team consisting of a faculty of department of community medicine, one post graduate, and two interns. Information was obtained from one individual, preferably head of the family and recorded on structured questionnaire as per NVBDCP operational manual. [6] Data was compiled on Windows spreadsheet, and analyzed using SPSS statistical package version 19.

Ethical approval of the Institutional Ethical Committee and informed consent of the head of family were obtained.

RESULTS

A total of 4 clusters (one urban and three rural) were studied. These 4 clusters covered a total of 120 households (90 rural and 30 urban) and yielded a population of 542 (417 rural and 125 urban). Table 1

shows the age distribution of the population. As shown in the table, 2.77% of population was below 2 years of age, and maximum population (78.41%) belonged to age group more than 14 years.

Table 1: Distribution of population as per Age

Age	Cluster A (Rural & Tribal)	Cluster B (Rural)	Cluster C (Rural)	Cluster D (Urban)	Total	Percentage
<2	8	2	2	3	15	2.77
2-5	8	4	5	7	24	4.43
5-14	17	17	27	17	78	14.39
>14	99	120	108	98	425	78.41
Total	132	143	142	125	542	100.00

Note: The age grouping has been done based on number of DEC tablets (100 mg) to be ingested i.e. less than 2 nil; 2-5 age- 1 tablet; 5-14- 2 tablets; >14- 3 tablets.

Distribution of population as per gender is shown in Table 2 which shows that 50.74% of study population was males, while 49.26% were females.

Table 2: Distribution of Population as per Gender

Cluster	Households	Male	Female	Total
Cluster A (Rural)	30	68	64	132
Cluster B (Rural)	30	65	78	143
Cluster C (Rural)	30	77	65	142
Cluster D (Urban)	30	65	60	125
Total	120	275 (50.74)	267 (49.26)	542 (100.00)

Eligible Population, Coverage and Compliance Rates: As per the instructions, children below 2 years of the age, pregnant women and seriously ill patients were not eligible to receive MDA. The eligible population in four study clusters was 514 (94.83%) (Table 3: Column B). Out of these 432 individuals residing in 101 houses were visited by DD and received the drugs (Column C of Table 3). Column D of the Table shows that out of 432 who were covered 330 individuals (76.39%) ingested the drugs. Thus the effective compliance rate was 64.20% (95% CI 59.97-68.23) as 330 individuals out of 514 eligible consumed the drugs.

Table 3: Distribution of Eligible population, Population Covered by DD & Individuals Ingested Medicines in Each Cluster

Cluster	Households	Total population (A)	Eligible population* (B)	Coverage Rate** (C)	Compliance Rate*** (D)	Effective Percentage Rate **** (D/A x 100)
Cluster A (Rural)	30	132	123	58	22	17.89
Cluster B (Rural)	30	143	139	128	92	66.19
Cluster C (Rural)	30	142	133	133	129	96.99
Cluster D (Urban)	30	125	119	113	87	73.11
Total	120	542	514 (94.83%)	432 (84.05%)	330 (76.39)	64.20 (95% CI 59.97-68.23)

* **Eligible Population:** Total population less children less than 2 years, pregnant women & seriously ill patients

** **Coverage rate:** Percentage of individuals, out of eligible population provided MDA drugs by DD

*** **Compliance Rate:** Percentage of individuals who ingested drugs out of individuals provided with drugs

**** **Effective Compliance Rate.** Percentage of individuals who ingested drugs out of total eligible population.

The reasons for non-compliance as revealed by the respondents are tabulated in Table 4. As shown, fear of side effects (46.08%), unaware of the benefits (31.37%), forgot to take medicines (8.82%), not at home (6.68%) and difficult to give medicines in tablet form to young children (6.68%) were reasons for non-compliance.

Table 4: Reasons for Non Compliance among those who received the drugs

Reason	Number	Percentage
Fear of side effects	47	46.08
Benefit of taking medication not informed	32	31.37
Forgot to take tablets after food	9	8.82
Not at home	7	6.86
Difficult to give medicine to children 2-5	7	6.86
Total	102	100.00

Side Effects. The side effects due to medication were reported by 6 (1.81%) individuals who ingested the drugs (Table 5). Headache (1 case), nausea (2 cases), dizziness (2 cases) and vomiting (1 case) were the only side effects reported. All side effects were mild in nature and the individuals recovered fully without any referral to PHCs.

Table 5: Side Effects

Cluster	Compliance	No of cases with Side Effect
Cluster A (Rural)	22	1
Cluster B (Rural)	92	1
Cluster C (Rural)	129	3
Cluster D (Urban)	87	1
Total	330	6 (1.81%)

Reservation regarding DD. Eighteen (17.82%) out of 101 respondents (19 households who were not visited by DD have been excluded) expressed reservations regarding the DD. The main reservations were that the DD did not explain the purpose, benefit, dosage schedule, side effects etc of the drugs. Most of the respondents who had reservations were those who had not complied with the MDA.

DISCUSSION

Coverage of MDA. As mentioned earlier, effective compliance rate of at least 85% among eligible population in endemic districts is essential for eliminating LF. Obviously, this means that the coverage rate must be higher than 85% to discount for less than 100% compliance rate. The present study revealed that the coverage rate among study population was 84.05% which in itself is below the desired effective compliance rate of 85%. MDA coverage in state of Andhra Pradesh (data from newly formed state of Telangana not being reflected separately) as reported by Directorate General of Health Services since 2004 has been between 84.33-93.30%.^[8] In a study^[9] conducted in Nalgonda district after MDA activities in 2010 reported a coverage rate of 46.2% while Nirgude A S et al^[10] reported a coverage rate of 79.70% in the same district after MDA programme during 2011.

Compliance Rate. Whereas, the coverage is direct reflection of programme management, the compliance rates is more intimately related to IEC activities and community involvement. The present study showed that the compliance rates for both DEC and albendazole among those who were covered was above 76.39%. In comparison, the study by Nirgude et al (2011) detected a much lower compliance rate of 43.04% after MDA activities and Malhotra V et al (2013) reported a compliance rate of 64.43% in the same district. This reflects an improving trend in compliance rates and a positive sign towards programme success. In a study conducted in Thiruvanthapuram district of Kerala by Nujum ZT^[11] during 2007 reported a low compliance rate of 39.5%, while a study^[12] conducted to evaluate the MDA programme conducted during 2012 in Bankura district of W Bengal detected an effective compliance rate of 93.7%.

Reasons for Non-Compliance. In any mass drug administration programme, perceived side effects are important for programme success. In the present study fear of side effects (46.08%) was the commonest cause of non-compliance. Other reasons were ‘unaware of benefits of the MDA’ (31.37%), ‘forgot to take medicines’ (8.82%), ‘being on other medications’ (6.86%) and ‘difficult to give tablets to young children’ (6.86%). All these reasons can be tackled by improving the IEC activities prior to MDA programme so that the eligible population is well aware of benefit and safety of the programme. Tablet albendazole is a 400 mg tablet, and many children are unable to swallow the tablet. It may be worthwhile to introduce a liquid preparation for children below 5 years of age. Various studies conducted earlier in India have also reported ‘fear of side effects’ as an important reason for non-compliance. [9-14]

Side Effects. In comparison to perceived side effects, the actual side effects were minimal (1.81%), mild and did not require any treatment. Other studies in India [10-12] have also reported a low incidence of side effects. This reflects the safety of the drugs, and deserves to be highlighted during IEC activities prior to MDA every year to augment compliance rate.

CONCLUSION

Mass drug administration is the backbone of elimination of LF, a disease that causes disfigurement, disability and discrimination. The world today has knowledge as well as resources to eliminate the disease. The present study reveals that, in addition to compliance rates, the programme managers at all levels must ensure up gradation of coverage rates by involving more human resources, supervision and incentive linked to work-output. The drugs are safe and effective.

What is needed is improved programme management through better IEC activities prior to MDA, community involvement and supervision of the activities.

REFERENCES

1. Neglected tropical diseases. World Health Organization. Available at www.who.int/neglected_diseases/en/
2. Lymphatic Filariasis. Fact Sheet No 102. World Health Organization, Media Centre. Available at www.who.int/mediacentre/factsheets/fs102/en/
3. Lymphatic Filariasis: Managing Morbidity and Preventing Disability. WHO Global Programme to Eliminate Lymphatic Filariasis 2013. WHO. Available at www.who.int/lymphatic_filariasis/en/
4. Elimination of lymphatic filariasis as a public health problem. Resolution of the executive board of the WHO. Available at www.who.int/lymphatic_filariasis/resources/WHA_50%2029.pdf
5. Govt of India (2014). Annual Report 2013-2014, Ministry of Health and Family Welfare, New Delhi.
6. National Health Policy 2002 (India). Available at mohfw.nic.in/WriteReadData/1892s/18048892912
7. Guidelines on filariasis control in India and its elimination (2009). Available on www.nvbdc.gov.in/Doc/Guidelines-Filariasis-Elimination_India.pdf.
8. National Roadmap for Elimination of Lymphatic Filariasis (ELF). Available at nvbdc.gov.in/iec.html
9. Saiprasad GS, Takalkar Anant A, Prasad VG, Nirgude AS, Naik PR, Palve S. Evaluation of Mass Drug Administration in Elimination of Lymphatic Filariasis in Nalgonda District. Indian J of Public Health. 2010; 54(4):104-199
10. Nirgude AS, Naik PR, Nagaraj K, Reshmi SS, Takalkar AA, Prasad VG.

Evaluation of coverage and compliance of Mass Drug Administration programme 2011 for Elimination of Lymphatic Filariasis in Nalgonda District of Andhra Pradesh, India. National Journal of Community Medicine. 2012; 3(2): 288-293

11. Nujum ZT. Coverage and compliance to mass drug administration for lymphatic filariasis elimination in a district of Kerala, India. Int Health. 2011; 3 (1):22-26
12. Ghosh S, Samanta A, Kole S. Mass drug administration for elimination of lymphatic filariasis: Recent experiences

from a district of West Bengal, India. Trop Parasitol. 2013; 3(1):67-71

13. Patel PK. Mass drug administration coverage evaluation survey for lymphatic Filariasis in Bangalkot and Gulburga districts. Indian J Community Med. 2012; 37:101-106
14. Chattopadhyay D, Bisoi S, Basu M, Dutta S, Chatterjee T, Roy S. Annual mass drug administration to eliminate lymphatic filariasis: A study in Purba district of West Bengal. International Journal of Basic and Applied Medical Sciences. 2012; 2(2): 43-51.

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