Research Article

An evaluation of mass drug administration for lymphatic filariasis in Bidar district, Karnataka

Prasad K N, Anil R

Department of Community Medicine, Dr. B.R. Ambedkar Medical College, Bengaluru, Karnataka, India

Correspondence to: Prasad K N, E-mail: drknprasad2@gmail.com

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ABSTRACT

Background: The elimination of lymphatic filariasis in highly endemic countries results in a reduction of prevalence in permanent disabilities from communicable diseases. The qualitative and quantitative performance of mass drug administration (MDA) efforts in attaining the above goal is important. **Objective:** To evaluate the MDA as independent assessor in Bidar district for the year 2015 in Karnataka. **Materials and Methods:** The community-based, descriptive, and evaluative study was conducted in Bidar district during 28th -30th January 2016. The multistage stratified sampling was used in the selection of three rural and one urban cluster. The number of houses covered was 30 in each cluster. The information was collected in the predesigned questionnaire from each house at their doorstep that included enrolment, coverage, distribution, consumption, and side effects of medicines. **Results:** The number of family members in 120 houses was 602. The enrolment of eligible population and the drug distribution was to the extent of 95%. The drug consumption rate and direct observation of treatment were 96% and 39%, respectively. The stock maintenance of medicines was poor. The side effects of medicines were 2% among the study population. The formal report submissions do not exist at the village and primary health center level. The reports were generated in illogical way. **Conclusion:** The enrolment, coverage, and consumption rates were satisfactory, but the direct observation of treatment was poor. Majority consumed medicines in divided doses in a day. There was no formal method of submission of MDA reports from village to the district level.

KEY WORDS: Evaluation; Mass Drug Administration; Filariasis; Diethylcarbamazine Citrate; Albendazole; Bidar

INTRODUCTION

Lymphatic filariasis was the most common cause for permanent disability in lower limbs in the tropical countries. *Wuchereria bancrofti* is the most common parasite in India, and humans are exclusive for this species. Lymphedema and scrotal swelling leads to permanent disability. Lymphatic filariasis has already eliminated in Japan, Taiwan, South Korea, and Solomon Islands and marked reduction in China mainly with mass drug administration (MDA) once a year. The global burden of 5.1 million disability-adjusted life years lost due to lymphatic filariasis in 10 countries in the world.[1]

The national program that initiated in 1955 to eliminate filariasis, later the program is merged with the National program for the control of vector-borne diseases along with malaria, dengue, and chikungunya fever. One of the strategies was MDA to bring down the transmission rate and the prevalence of lymphatic diseases.[1,2] To eliminate effectively interrupting transmission MDA compliance must exceed 65-75% with 5-6 rounds of treatment.[2] Several studies reported on coverage and compliance rates in several districts in India.[3-9]

The recommended approach is annualized supervised MDA through door to door visit by coadministration of a single

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doses of diethylcarbamazine citrate (DEC) by 2 days mopping up operations. Children below 2 years, pregnant women, and seniors were accepted from MDA. The districts of the high prevalence of filariasis were covered and the number of districts is reducing under MDA in the country, in the year 2015, the districts are covered for MDA and number of districts was selected from Karnataka. The coverage rate of MDA in Bidar district was 70-94% between 2005 and 2014.[7] The annual MDA was undertaken in Bidar district from 14 to 30 December 2015 as the guidelines of Government of India as NVBDCP. The objective of this study is to evaluate the coverage, compliance, drugs and logistics management and completeness of reporting of MDA in Bidar district.

MATERIALS AND METHODS

Bidar district in Karnataka is having the total population of 17 Lakh in five taluks. The MDA program is being conducted every year from 2005. It was carried out between 14 and 31 December 2015 in this district.

The MDA coverage includes two stages. The first stage includes an enumeration of all family members and registering them in the family register. Informing them about the MDA on specific day and creating general awareness about the disease. In the second stage, the DEC and albendazole tablets are given under directly observed therapy (DOT) to each family member as per the dosage recommended by the program guidelines. They were instructed about the report if any individual develops side effects after consumption of medicines.

It is a community-based, descriptive, and evaluative study. The survey was carried out on 3 days from 28th to 30th January 2016. The multistage stratified sampling technique was used in the selection of the clusters. The clusters were selected based on the high to low coverage MDA as report given by the district authority. Three clusters from rural areas, namely, Janwad, Dongapur and Mehakar primary health center (PHC), and urban area in Tippusultan colony. The houses in the clusters were selected to represent the different parts of the village. The structured pro forma as designed and preformed questionnaire was used in data collection from each house.

The relevant information was collected from the district health and family welfare authority, district program officer, district health supervisor, medical officers at PHCs, pharmacists, health workers, Accredited Social Health Activist (ASHA) workers, and selected families from the clusters.

Preparatory Phase

Planning stage

District action plan submission and district coordination committee meetings were held after notification of MDA coverage from Health and Family Welfare Commission, Karnataka. Funds were released 7 days before the commencement of MDA.

Training

The Medical officers, senior specialists, health workers, and ASHA workers in the district were trained before the MDA as per the schedule.

Enrolment

The family registers were supplied in adequate numbers to the health workers. The family registers were maintained for enrolling the family members by the health workers.

Supply of medicines and logistics

The adequate quantity of DEC and albendazole tablets was supplied to each PHC in time and was distributed to all health workers and ASHA workers.

RESULTS

The number of houses surveyed was 120 from four clusters, and a sample population of 602 was enrolled for the survey. The information was obtained from interviewing 190 family members among them.

Table 1 shows the coverage and compliance of MDA as reported by the district and findings of evaluation. The enrolment of the family members as per the family registers in all four clusters from 120 houses was 89%. Around 10% of family member's enrolment was left out in the selected families. The number of eligible population was more compared to their report. The number of individual treated was less compared to the eligible population. The drug distribution following the enrolment of the population was cent percent according to the reports from the clusters.

Table 1: MDA reports from the evaluation team, reports of the clusters and district for the year 2015

Parameters	Findings of evaluation	As reported in the evaluated areas	District report
Population covered	602	27428	1768822
Entry in register (%)	89	100	100
Eligible population (%)	94	91	90
Drugs distributed (%)	95	100	100
Drugs consumed (%)	96	89	90.7
Completed full course (%)	88	Not available	Not available
Under DOTS (%)	39	Not available	Not available
Side reactions (%)	2	0.06	0.05

DOT: Directly observed therapy, MDA: Mass drug administration

However, it was 95% according the evaluation in the same clusters. The drugs consumed by the family members were to the extent of 96% as against the report. There was an underreporting of the consumption rate.

The eligible population completed the full course of treatment to the extent of 88%. This includes consumption of DEC and albendazole. The completion was considered as medicines consumed within 6 h and as a single dose. Many did consume the medicines in divided doses within 24 h. Only 2 out of 5 people consumed the medicines under the DOT and this was noted mainly among the school children. The side effects for the medicines were 2% against the report of <1%.

There was no formal reporting format from village to the PHC, and information about the activities related to MDA from health workers was received through telephone.

DISCUSSION

The principle adopted in MDA for filariasis elimination is that a single dose of DEC administered annually for 4-6 years will interrupt the transmission.[1,2] Recently, albendazole is added to kill the adult worm in the program to reduce the risk of infection in India.[5] The Bidar district is covered under high endemic area for lymphatic filariasis since last 10 years.[7] There were issues, the district authorities did not take corrective action to implement the MDA and submission of the report.

The district has done action plan and appropriate follow-up action was taken in a satisfactory ways. The enumeration of population based on family members available before the MDA is very critical for estimation of the drugs and other logistics. Irregularity in this issue causes the deficiency of medications necessary for the program. The number of family members as mentioned in the family registers was not correct and the number of persons not registered as the extent of 10%. The highest was observed in Dongapur area cluster compared to other clusters. Most of the male family members were left out in the family registers especially in the age group of 16-40 years.

The state has supplied the adequate quantity of medicines with respect to the population of the district. The DEC and albendazole tablets were distributed to each PHC and thereafter to the health workers of each village. The remaining medicines after MDA session was over were not returned to PHC and closing stock after the MDA was not updated at PHC. Hence, the drug stocks maintained at PHC level was poor and similar practice was followed since the last few years in this district. The problem of left out DEC and albendazole medicines is not really known and this evaluation did not included this issue.

Awareness was created by the health workers and ASHA workers in their village jurisdictions while they were preparing family registers. The adequate number of tablets DEC and albendazole was distributed to each family based on their survey and most of them were convinced to swallow the medicines. The coverage was a better because of involvement of schools, and DEC medicines were administered to all children in the school under direct observation. The involvement of school teachers in administration of DEC and albendazole was encouraging and satisfactory. The DEC tablets were taken by the most of family members in divided doses within 24 h on MDA day as against the policy of single dose. Most of the family members were instructed to swallow medicines as a single dose or one time. As a result they consumed in divided doses in a day. The percentage calculated for drugs consumed was 96% among the distributed population who received the drugs. If we consider the same consumption rate for the eligible population, the consumption rate will be lesser with 91%. The percentage calculated for under DOTS was considered as DEC and albendazole consumed by the individual under the supervision of the health worker either on the booth day or mop-up days.

The reasons for the nonconsumption as a single dose remained the same compared to earlier evaluation study reports in the same district in 2008.[7] The action by the district authority is not convincing to improve the compliance of drugs distribution and consumption of drugs.

Incidence of side effects: The incidence rate of side effect was observed among 11 individuals accounting to 2% of the consumed individuals during the evaluation, and the reported rate was 3% by the concerned authority. The differences were not great, but if we interpret with the report generation it amounts to gross mistakes since the proper reporting to the concerned authority has not happened at all. The incidence rate of side effects is reducing over the years in this district covered under MDA. This reflects the micro filarial infection rates are reducing showing the effectiveness of MDA program.[3,5]

The evaluation report of the Bidar district shows similar in most of the aspects of coverage, distribution, consumption, and compliance rates of MDA with other evaluation studies conducted in most of the endemic districts in India.[4-14]

The formal reports on MDA from PHC were not submitted to taluk or district level. Hence, most of the components of the reports on coverage, compliance, and drugs utilized by the PHC and the same information was given to the higher level was on illogical.

CONCLUSION

The overall performance of the district on coverage and compliance in MDA is satisfactory, and the district has to

make the formal reporting system at village level to PHC. The supervision by the district authority requires being intensified.

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