

Coverage Evaluation of Mass Drug Administration for Lymphatic Filariasis in Mahoba District of Uttar Pradesh

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ABSTRACT

Background

Lymphatic filariasis is a neglected tropical disease. In this disease patient has face hydroceale and lymphedema in leg. 863 million people had risk of lymphatic filariasis in 2020 who were belongs to 50 countries. The present study aimed to assess coverage and compliance of mass drug administration for lymphatic filariasis.

Methods

From 300 households (1660 individuals) in rural area was covered in coverage evaluation survey by systematic selection of subunits using PPS. Data collected by trained team and data were collected using predesigned questionnaire. MS-Excel spreadsheet used for data compilation.

Results

Overall, estimated 37.8% drugs were swallowed in rural area of District Mahoba. 3.7% person in study population experienced adverse drug effect. In rural area, albendazole was swallowed more by females as compared to males but reverse in case of DEC. The most common reason for both albendazole and DEC not swallowed as reported by study population was not sick.

Conclusions

For filariasis elimination, need to increase coverage and also increase compliance for take drug. Coverage and compliance increase by perform information education and communication activities perform with different platform.

Keywords: lymphatic filariasis; mass drug administration; compliance and coverage; Mahoba.

INTRODUCTION

Lymphatic filariasis is a neglected tropical disease. 863 million people had risk of lymphatic filariasis in 2020 who were belongs to 50 countries. Post MDA or post validation surveillance will cover of all 72 (100%) countries as per Global Programme to Eliminate Lymphatic Filariasis (GPELF) goals for 2030. Annual mass drug administration (MDA) preventive chemotherapy strategy for lymphatic filariasis elimination recommended by WHO.¹ In India, Lymphatic filariasis is common in both city and village areas of 256 districts. It is more prevalent in poor people in

both areas (urban and rural).² Although many studies have been done for assessing MDA coverage and compliance in India and in Uttar Pradesh also but no such study has been done in Mahoba district. Hence this survey was done with main objective to assess coverage and compliance of mass drug administration for lymphatic filariasis.

METHODS

This study was a community-based cross-sectional study. A community-based cross-sectional study was conducted at rural area of District Mahoba, Uttar Pradesh, India after getting approval from the institute

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review committee (Ref. no. IEC/RDMC/Cert/07). Total 300 households (30 X 10 cluster sampling) choose for survey and was also a coverage evaluation survey in Bundelkhand region of Mahoba district according to the national guidelines of NVBDCP, for assessment of July 2021 round of MDA. Subunit was selected by systematic method. Randomly selected 30 subunits within the survey area by using Probability Proportional to Estimate Size (PPES) sampling. A segment of households were randomly selected (typically - 10 household) for sampling efficacy for every subunit.

The coverage survey builder (CSB) developed two lists (List A and List B) for help the selection of households within the segment. The coverage survey builder also developed random number on the list corresponding to the household numbers. Data collected by trained team. Data had taken by team from 27.12.2021 to 30.12.2021. The subunit had divided into the predetermined number of segments and one segment was randomly selected. List A or B was to be used by a coin toss. Data collector collect the data from each house hold of segment which was already enumerate by local guide according to selected list (A or B) in survey. All member of each household were enlisted after then each member on the list using the questionnaire was interviewed. This method used for all household in selected segment. For more accurate identification and allocation of the subunits used GPS system of mobile. For better supervision of field supervisors, recorded response of respondent by the data collector. Initially data was entered in MS-excel. For data consistency the data cleaning was done to before doing data analysis. Pivot tables were generated for analyzing results. The number and percentage were calculated.

RESULTS

In this study total 1660 persons were covered in post MDA coverage evaluation survey, all people's belonged to rural area. Both albendazole and DEC were swallowed in rural area 761(45.5%), 632(38.1%) respectively. Overall, estimated 37.8% drugs were swallowed in District Mahoba. 28(3.7%) persons in study population experienced adverse drug effect. In rural area, albendazole was swallowed more

by females as compared to males which were 46.4% (351 female) and 44.8% (405 male) respectively. But, DEC was swallowed more by males as compared females which were 352(38.9%) and 280(37.0%) respectively. 13(3.7%) females resident of rural area experienced adverse drug effect. (Table 1)

Table 1. Drug offered & swallowed by Area type and Sex.

Particulars	Sex	
	Female(%)	Male(%)
Persons checked (n)	756(45.54%)	904(54.46%)
Albendazole offered	474(62.7%)	557(61.6%)
Albendazole swallowed	351(46.4%)	405(44.8%)
DEC offered	418(55.3%)	505(55.9%)
DEC swallowed	280(37.0%)	352(38.9%)
All drugs offered	417(55.2%)	504(55.8%)
All drugs swallowed	279(36.9%)	348(38.5%)
Any drug swallowed (n)	352(46.25%)	409(53.75%)
Adverse drug reaction	13(3.7%)	15(3.7%)

The most common reason for both albendazole and DEC not offered as reported by study population was nobody came to their house followed by people absent at home and did not hear about MDA. Other minor reasons were underage, pregnant, drug ran out, others (Table 2).

Table 2: Distribution of participants who were not offer drug.

Reason for not offer drug	Reasons- Albendazole not offered-628(100%)	Reasons - DEC not offered -726(100%)
Underage	22(3.5%)	23(3.2%)
Pregnant	13(2.1%)	13(1.8%)
Breastfeeding	2(0.3%)	9(1.2%)
Sick	11(1.8%)	53(7.3%)
Absent	226(36.0%)	226(31.1%)
Didn't hear about MDA	65(10.4%)	65(9.0%)
Drug ran out	0(0.0%)	25(3.4%)
Nobody came	289(46.0%)	289(39.8%)
Other	0(0.0%)	23(3.2%)

The most common reason for both albendazole and DEC not swallowed as reported by study population was not sick. After than reasons of albendazole did not swallow which were fear of side effect followed

by not enough information given and bad taste. But reasons of DEC were not swallowed which were not enough information given followed by fear of side effect and bad taste (Table 3).

Reason for not swallowed	Reasons - Albendazole not swallowed- 270(100%)	Reasons - DEC not swallowed- 299(100%)
Fear of side effects	42(15.6%)	38(12.7%)
Bad Taste	14(5.2%)	14(4.7%)
Not sick	180(66.7%)	203(67.9%)
Not enough information given	34(12.6%)	44(14.7%)
Other	0(0.0%)	0(0.0%)

The most common reason for both albendazole and DEC swallowed as reported by study population was fear of disease in rural. After than for reasons of albendazole swallowed which were useful information found from DA because it was give free and to treat disease. But reasons of DEC were swallowed which were useful information found followed by to treat disease and it was give free (Table 4).

Reason for swallowed	Reasons - Albendazole swallowed- 761	Reasons - DEC swallowed- 632
Fear of disease	484(63.6%)	405(64.1%)
To treat disease	72(9.5%)	56(8.9%)
Because it was given free	77(10.1%)	47(7.4%)
Useful information from DA	128(16.8%)	124(19.6%)
Other	0(0.0%)	0(0.0%)

DISCUSSION

In this study, 1660 persons had covered in Mahoba district. Coverage, effective coverage and compliance of albendazole were 62.11%, 45.54% and 73.33% respectively. For DEC Coverage, effective coverage and compliance were 55.60%, 38.07% and 68.47% respectively. But, nayak et al found in his study that was 95%, 88% and 93% represent to coverage, effective coverage and compliance of MDA respectively in rural area.³ According to study which done by Kulkarni et al, “ coverage, effective

coverage and compliance of MDA were ; 95.1%, 87.9%, 92.4% in respectively in rural area”.⁴ Kumar et al gave statement that 93.4%, 85.2% and 91.2% were represent to coverage, effective coverage and compliance respectively of DEC in rural area of his study.⁵ The study done by Jadhao et al showed coverage, effective coverage and compliance of DEC were 90.9%, 88.3%, 97.1% respectively in rural area.⁶ Shivalingaiah et al done study in district Kalaburagi and Yadgir on MDA where authors found coverage, effective coverage and compliance of MDA were 83.2%, 76.9%, 92.5% respectively in Kalaburagi district and 86.7%, 75.4%, 86.9% respectively in Yadgir district.⁷ Coverage, effective coverage and compliance of MDA were 55.2%, 48.5% and 87.9% respectively according to Banerjee et al.⁸ Similar finding in present study Coverage, effective coverage and compliance of MDA were 55.48%, 37.77% and 68.08% respectively. Barman SK et al found Overall coverage, effective coverage and compliance of MDA (Albendazole and DEC) were 51.7%. 19.1%, 36.9% respectively in study area.⁹ Present study had found Coverage, effective coverage and compliance of MDA were higher in males than female similar finding reported by Panika and Sahu and vice versa in Bhatia.¹⁰⁻¹¹ Most common reason for not intake albendazole were not sick (66.7%) followed by fear of side effect (15.6%). But for DEC, most common reason for not intake were not sick (67.9%) followed by not enough information given (14.7%). According to Kumar et al showed that the most common reason for not swallowing drug was Fear of side effects. But Kulkarni et al showed that the most common reason for not swallowing drug was lack of faith in the tablets, followed by belief that tablets are not required. Banerjee et al found that most common reason for non-consumption was fear of side effects followed by no faith in the drugs and forgot to consume. The most common reason for both albendazole and DEC swallowed as reported by study population was fear of disease in rural. Current study shows, 28 (3.7%) participants had got adverse effect. Halder et al found in his study that 25 (7.72%) participants reported adverse effect.¹² According to Halder et al, 6.44% participants

had got adverse effect which were 35.71%, 53.57%, and 60.71% complained of nausea, vertigo, and dizziness respectively.¹³ Kumar et al found in his study that 3 participants (0.59%) had got adverse effect.

CONCLUSIONS

In current study effective coverage of MDA was low (37.77%) which was less than national target (>85%). Main reason of not offering and not swallowing of drugs were nobody came and not sick respectively. We should mainly focus on training of drug distributors because this is the main weak part of this programme. Second thing, educate and motivate to our public for lymphatic filariasis.

Limitations: Recall Bias, Not covered Urban Area.

Recommendations

Sustaining the effectiveness of MDA programmed through capacity building of staff, proper microplanning prior to the programme and effective supervision during programmatic activities in a more effective way. The overall coverage crosses the pre-TAS target, therefore, best practices from the District Mahoba can be identified and can be used by other districts to improve coverage.

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