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Original Research Article

Mass Drug Administration (MDA) Campaign to Eliminate Lymphatic Filariasis (LF) &Coverage Evaluation Survey of Katihar District, Bihar

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Abstract:

Background: Lymphatic filariasis is targeted for elimination in India through mass drug administration (MDA) with Diiethylcarbamazine (DEC), Albendazole (ABZ) and Ivermectin. MDA were done in Katihar district as well by government. MDA campaign was conducted in February 2024 in Katihar district. Post MDA, a survey was conducted: (i) To estimate the coverage, effective coverage, and compliance of MDA in study area. (ii) To estimate the reasons for non- offering and non-consumption of MDA.

Methods: A training session conducted to conduct survey. Survey was done in 5 blocks having 4 villages in each block. Altogether 600 households were surveyed which caters sample size of 2707.Block were selected by lottery methods. Systematic random sampling methods were adopted for the selection of 30 households in each village/urban area. Pretested questionnaire were given to volunteers to collect data. After collecting data it were analyzed.

Results: After analyzing the data it was found that percentage of people received Albendazole were 76.1%. And DEC were received by 75.8%. It was also found that 7.5% people have not received even single dose till date even after multiple round of MDA conducted by government. Even after providing MDA some people did not consume the drug. Those who did not consumed Albendazole and DEC were 2.8% & 2.6% respectively. Reason for not consuming the drug were fear of side effects and bad taste mainly.

Conclusion: Currently MDA is restricted to the distribution of drugs only and the key issues of implementation in compliance, health education, managing side effects, and logistics are not given enough attention. It is therefore essential to address the issues linked to low compliance to make the program more efficient and achieve the goal of filariasis elimination.

Keywords: Lymphatic filariasis, Mass Drug Administration, Coverage Evaluation Survey, MDA, CES, Katihar.

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Introduction

Lymphatic filariasis (LF) or elephantiasis is presently a big cause of disability worldwide and can be eradicated with the advancement in various drugs. In more than 80 countries, the infection of elephantiasis is endemic with more than 1.3 billion people at risk and 120 million already infected worldwide. And one third of the endemic population resides in India. Many factors like human suffering, social stigma and costs associated with LF morbidity, were analyzed and in response to the specific resolution by the World Health Assembly, the Global Pro-gram to Eliminate Lymphatic Filariasis (GPELF) was launched by the World Health Organization (WHO) in 2000 with the goal of eliminating LF as a public health problem by the year 2020. [1,2] Transmission of Lymphatic Filariasis (LF) can be interrupted by mass drug administration (MDA). Earlier Dii-ethylcarbamazine citrate (DEC) was given every year to all age groups above 2 years of age, pregnant women and seriously ill/ old persons. Later on, one more drug Albendazole (400 mg) was added along with DEC in 2008 to cover adult worm in addition to mf, therefore resulting destruction of the parasite in immature and mature forms to prevent infected person from becoming a source of infection for vector and ultimately healthy persons and from developing clinical manifestation. Currently third drug Ivermectin was added along with the other two drugs. But in Katihar district of Bihar only two drugs i.e. Albendazole and DEC is implemented by Govt. of Bihar for MDA. In phase manner in some district Ivermectin is being added. [3,4] Need of the assessment and analysis of MDA implementation will be helpful to identify coverage compliance and the reasons thereof for

noncompliance. This will enable the programme of the government to overcome shortcomings and improve the MDA implementation next year. The extent of evaluation of MDA implementation may depend upon the need. For example, if a block reports consistently poor treatment coverage, the pro-gramme manager may undertake an in-depth evaluation and collect qualitative and quantitative information from communities and health centers to identify the lacunae and take steps to improve the programme. MDA-Coverage Evaluation Survey of Katihar District, Bihar have been done because the task was given by State health society to Community Medicine department, Government Medical College, Purnea which is near to Katihar district. Katihar district is among those thirty-eight districts which are the administrative headquarter of the district. The district is a part of Purnia Division. Katihar district is situated in north eastern part of Bihar State in India. It is one of the largest district which occupies area of 3,056 Sq Km. Katihar District have 3 Sub-Divisions (Katihar, Barsoi and Manihari) following by the 16 Blocks (Katihar Urban, Dandkhora, Hasanganj, Kodha, Sameli, Falka, Kursela, Barari, Mansahi, Pranpur, Barsoi, Balrampur, Azamnagar, Kadwa, Manihari and Amdabad).

The district latitude and longitude is 25.5422194, 87.5645687.

After Census 2011 Katihar district became one of the populous district in Bihar State with total population of 3,071,029 and the sex ratio was 916 Female per 1000 Male. [5]

Objectives of the Survey

1. To estimate the coverage, effective coverage, and compliance of MDA in study area.

2. To estimate the reasons for non- offering and non-consumption of MDA.

Methodology

As per the Ministry of Health & Family Welfare, We conducted a post MDA coverage evaluation survey in five blocks of Katihar district on 28, 29 & 30 May 2024. MDA was conducted in five blocks of Katihar district. The manpower to conduct this survey were 3 faculty as observer of the survey, 5 Volunteers to conduct interview and collect data, 1 supervisor, 3 Helpers. This study was conducted from 15th May to 10th July 2024. Training Session For Manpower: On 24.05.2024, A training cum sensitization session of Three hours were conducted at Community medicine department of Govt. Medical College, Purnea (Bihar). All the volunteers, Technical staff and doctors concerned with this survey came to Lecture theatre. Training and demonstration were given through various examples. Volunteers exercised the pre tested questionnaire. WHO Consultant and Assistant Professor& HOD of Community Medicine trained all the concerned manpower. After this session the team were allotted the area of survey through online lottery method. This was done in two phase. In 1st Phase Blocks were selected and in second phase ward/ SHC were selected through online lottery method. Volunteers and manpower associated with this project were assured to provide honorarium (including TA and DA).Faculties were assured to provide travelling allowance for monitoring, as the blocks of Katihar are far from GMCH Purnea. Fund was provided by state health Society Bihar to conduct this survey. Before starting the survey sample interval were calculated. Calculating the sample interval: Systematic random sampling methods were adopted for the selection of 30 households in each village/urban area. For a desired sample size of the households, a regular interval number (Dividing the total households of that selected village/urban with 30 households) to arrive at the sampling interval for the selection of households in the respective village for conducting interviews were done. Based on the sampling interval 30 households were to be interviewed.

Conducting Interviews of the selected households: Interview all family members were done by volunteers in the selected house & note findings in the attached format. For example, in a household, if there were 5 members, all 5 members should be enumerated, and the data collected for all five individuals. Even if some household members were not present at the time of the survey, their drug consumption details were collected from the person interviewed by the survey team. If the selected house is locked or no one was available to share information, the immediate next house was visited and conducted the interview and completed 30 houses in each village.

Basic demographic information such as age, sex and presence of family members at the time of interview was collected as discussed in training and guidance given. The information on MDA drug offered and swallowed by the members of the household were collected. The questionnaire also collected the information on reason for not offering the drug, reason for swallowing or not swallowing the offered drug and about adverse drug reactions that occurred (if any) after consuming the drug. The final part of the questionnaire dealt with awareness about MDA and Lymphatic filariasis.

The Data were collected in hardcopy. Same data were com-piled and entered in excel sheet. The Data entered were analyzed through Excel sheet and Med Calc software.

Data Analysis: Once the data were collected from each block/IU, the data was organized in a way that made it easy to work with. This involved cleaning the data to remove any errors or inconsistencies,

converting data into a common format, and structuring data into a excel spreadsheet.

Table 1: Baseline Characteristics of the survey are described after interpretation of the data

Block	SHC/Village/Ward	Total household covered	No of people interviewed	Team Members
Katihar Urban	Ward No-16,38,40,43	120	468	Dhiman Malakar, Arvind Kumar
Mansahi	Kajra, Bathnaha, SahebNagar, Akona	120	688	Santosh Kumar Jha Arvind Kumar
Kodha	Nakkipur,Bisharia, Fulwaria, Kodha Bhatwaria	120	560	Kailash Nath Sharma Arvind Kumar
Manihari	Madarichack, Baghmara, South Kantakosh, Mujwar	120	511	Mukesh Kumar Yadav, Ranjan Kumar
Kadwa	Baida, Kamru, Kantia, Kalyani	120	480	Govind Kumar Ranjan Kumar
		600	**2707**	

A. Sample Size of Survey to assess MDA coverage was 2707.Mean age +- SD of the survey population was 27.72+- 17.0 yrs. The picture of spread of survey population is shown in box and whishker diagram in figure below.

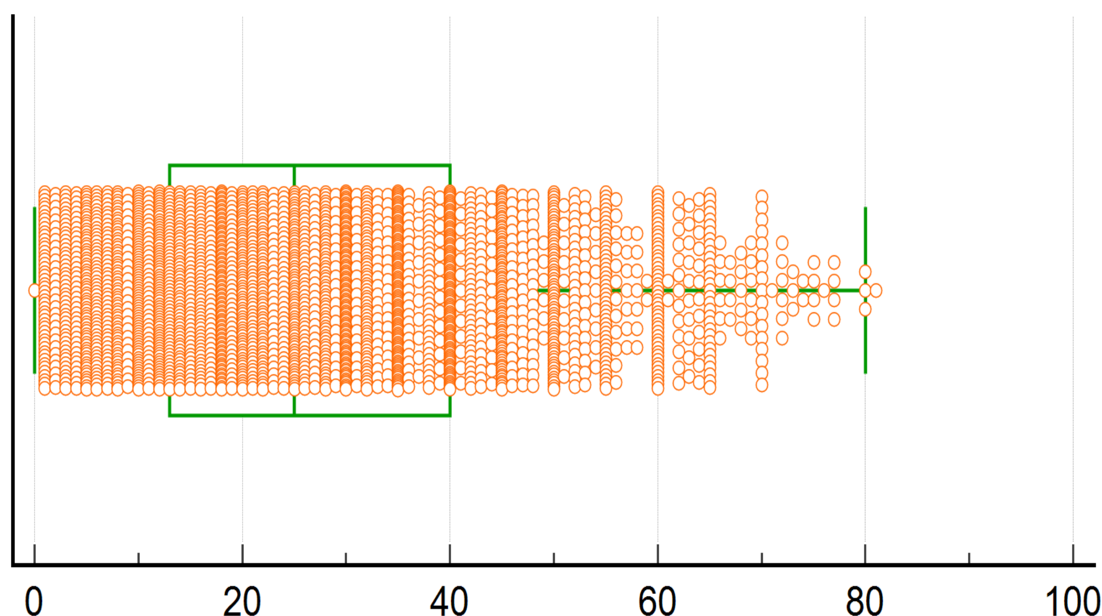

Figure 1:

(Box and Whishker diagram showing population composition under study, Vertical axis- Cases, Horizontal axis-Age)

B. Reporting status while doing survey of the household was either by self or by family members which was respectively 46.9 % and53.1%.

Final Result-

1. After analyzing the data it was found that per-centage of people received Albendazole were 76.1% (2060/2707), those who did not receive were 638(23.6%), response of Don't know were 9 (0.3%), Chi-squared-86.946, p <0.0001. Second medicine DEC was received by 75.8% (2053/2707), not distributed were among 644 (23.85%), and response of Don't know were 10(0.4%), Chi-squared-93.75, p <0.0001.

It was also found that 7.5% (200/2660) people have not received even single dose till date even after multiple round of MDA conducted by government.

2. Reason for not Offered MDA-

Reason for not offering treatment were mainly underage, pregnancy, breastfeeding mother, sickness and absence from home. The details are shown in Table no 2.

Table 2: Reason for not Offering MDA

Reason for not Offering MDA										
	1	2	3	4	5	6	7	8	9	Chi square, Significance
Albendazole	78 (2.88 %)	21 (0.78%)	1 (0.03 %)	58 (2.14%)	246 (9.08%)	5 (0.18 %)	0 (0%)	201 (7.42%)	28 (1.03 %)	658.006 P<0.0001
DEC	77(2.84 %)	20(0.74 %)	1(0.03 %)	58(2.14 %)	246(9.08%)	5(0.18 %)	0(0 %)	209(7.72%)	28(1.03%)	667.025 P<0.0001

(Table 2: Reason treatment was not offered - 1=Underage, 2=Pregnant, 3= Breastfeeding, 4=Sick, 5=absent, 6=didn't hear about the MDA, 7= Ran out of medicine, 8=Nobody came, 9= other).

3. Not consuming Treatment: Even after providing MDA some people did not consume the drug. Among 2660 people who received Albendazole, 2023 (97.2%) consumed drug and those who did not consumed were 57(2.8%), Chi-squared-55.312, p <0.0001. Consumption of DEC were among 2000(97.4%) and those not consumed were 53(2.6%), Chi-squared-89.07, p <0.0001.

4. Reason for not consuming Treatment: Reason for not consuming treatment were mainly fear of the side effects and bad test. The details are shown in the table 3.

Table 3: Reason for not swallowing

Reason for not swallowing				
	1	**2**	**3**	**Chi square, Significance**
Albendazole	24(24/57) (42.1%)	24(24/57 (42.1%)	9(9/57) (15.8%)	42.398 P<0.0001
DEC	27(27/53) (50.94%)	11(11/53) (20.75%)	15(15/53) (28.3%)	34.320 P<0.0001

(Table 3: Reason Treatment was not consumed - 1=Fear of side effects, 2=Bad taste, 3 = Other)

5. % Family members with side effects after consuming drug:

Side effects were observed in 8% (149/1861) individuals.

Summary

MDA was conducted in 05 blocks of Katihar district in the last week of May 2024. Post MDA coverage evaluation survey was conducted by volunteers trained. Five volunteers of Katihar and nearby district along with helpers collected Data. The data were collected, arrange in excel sheet in computer and analyzed by MS Excel and Medcalc software. The findings of the Coverage evaluation survey (CES)shown that percentage of the people receiving drugs Albendazole were 76.1% (2060/2707) and receiving DEC were 75.84%(2053/2707) i.e. almost ¾ of the population received MDA.

The People who have not received even single dose till date were 7.5% (200/2667). Most prevalent reason of not receiving medicine were absenteeism i.e. 246 (9.08%) people were absent. Even after receiving the MDA 2.10% and 1.95% have not consumed the Albendazole and DEC respectively. Reason for not consuming Treatment is fear of side effect and bad taste. Some sorts of side effect among 1036 /2707 (38.27%) were observed in interview but those side effects were minor like headache, fever, body ache etc. During this survey 12 people had Hydrocele i.e. 0.44%.

Recommendation

Currently MDA is restricted to the distribution of drugs only and the key issues of implementation in compliance, health education (IEC & BCC Activities), managing side effects, and logistics are not given enough attention. Strengthening the IEC in rural as well as in urban areas focusing on the prevention of filariasis can be done once a year It is therefore essential to address the issues associated with low compliance to make the pro-gram more efficient and achieve the goal of filariasis elimination. Supportive supervision and monitoring of activities need to be strengthened.

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