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Original article

Trend of MDA Coverage and Compliance in the Four Endemic Districts of Jharkhand: A Secondary Data Analysis.

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Abstract

Background: Lymphatic filariasis is one of the world's leading causes of long term disability. It is not fatal, but it causes debility and imposes social and economic burden to the affected individuals, their families and society. In India, 250 districts have been identified to be endemic for filariasis. In Jharkhand 17 out of 24 districts are declared to be endemic for lymphatic filariasis. The Government of India in 2004 began a nationwide MDA campaign in all endemic districts with an annual dose of DEC with aim of eliminating it as a public health problem by the year 2015. The strategy is to cover more than 85% of the population with the drug continuously for at least five years to eliminate lymphatic filariasis.

Objectives: (1) To know the trend of coverage of MDA in selected districts of Jharkhand in last three years. (2) To assess the compliance rate. (3) To know the reasons for poor compliance, if any. **Methods**: A record based study was done in November 2012, on "Evaluation of MDA for ELF in Jharkhand" conducted by PSM Dept. RIMS Ranchi, with support from NVBDCP. 4 out of 17 endemic districts of Jharkhand i.e. Ranchi (including Khunti), Hazaribagh (including Ramgarh), Gumla and Sahibganj were selected for secondary data analysis.

Statistical analysis: District wise comparative tables showing coverage and compliance percentage were generated in MS excel.

Results: The MDA coverage and compliance rate are not satisfactory and a matter of great concern as it may not help in achieving MDG. **Conclusion**: IEC activities should be strengthened further. There are logistic, human resources and behavioural issues which need to be addressed in order to optimize compliance.

Keywords: MDA, ELF, Coverage, Compliance.

Introduction:

Lymphatic filariasis (LF), an ancient parasitic disease, is responsible for untold human suffering.[1] India contributes about 40% of the total global burden and accounts for about 50% of the people at the risk of infection.[2] In pursuance to WHO call for elimination of lymphatic filariasis, Government of India in 2004 began a nationwide mass drug administration (MDA) campaign in all endemic districts with an aim of eliminating it as a public health problem by the year 2015.[1] Under mass drug administration (MDA) campaign, on a particular day a single dose of Diethylcarbamazine (DEC) 600mg and antihelminthic Albendazole (ALB) 400mg is distributed to inhabitants of all age and sex in filarial endemic areas, excluding children below 2 years of age, pregnant women and severely ill patients.[3]

One of the major challenges in the transmission interruption using MDA is that a very high coverage of 85% is required to achieve the interruption of transmission in 4-6 year time.[4] This high coverage is essential for four to six years, which is the average reproductive life span of the adult

worm.[5] Compliance with medical recommendations, especially with drug therapy, has been recognized to represent a complex challenge.[6] The effectiveness or success of LF elimination depends on the coverage and consumption (compliance) of the drug by the affected population and intermediary evaluation of the program.[7]

A total of 250 districts spread in over 20 states/UTs of India have been identified to be endemic for filariasis. Jharkhand is one of the affected states in our country. Out of 24 districts 17 are declared to be endemic for lymphatic filariasis.[8] Many areas in the state, predominantly tribal and hilly areas, lack basic health care infrastructure limiting access to health services at present.[9]

If we want to achieve our goal to eliminate lymphatic filariasis by 2015, the coverage along with compliance (actual consumption) of drug is important in the consecutive 4-6 years for elimination of lymphatic filariasis. Hence the present study was conducted to assess the trend of MDA coverage and compliance on the basis of evaluation survey done by RIMS for MDA 2009-2011.

Methodology:

The methodology focuses the study design of independent evaluation done by the Department of PSM, RIMS, Ranchi according to the guidelines of Elimination of Lymphatic Filariasis in India (2009). The Department of PSM, RIMS, Ranchi had been involved in evaluation of MDA survey since the launch of MDA campaign. This study is a secondary data analysis based on the Independent Midterm Evaluation Report of MDA carried out by the PSM Department, RIMS, with support from NVBDCP. From the evaluation report of last three years (MDA 2009, MDA 2010 and MDA 2011), four common districts namely Ranchi (including Khunti), Gumla ,Sahibganj and Hazaribagh (including Ramgarh), were selected for comparative purpose. The present study is an attempt to evaluate the trend of coverage and compliance of MDA in subsequent three years in all the four districts.

The working definitions for drug coverage and drug compliance are as follows [10:]

Drug coverage: It is the number of eligible persons who received DEC and Albendazole together during MDA campaign. It is calculated as the total number of persons who received drug divided by eligible population and is expressed as percentage.

Drug compliance: It is the number of persons who ingested DEC and Albendazole together in presence of drug distributor during MDA campaign. It is calculated as the total number of persons who ingested drug divided by total number of persons who received the drug and is expressed as percentage.

Study design of Independent Evaluation done by Department of PSM,RIMS – According to the guidelines of Elimination of Lymphatic Filariasis (ELF) in India (2009), to know the compliance of the drug, from each district 4 clusters (each cluster having 30 households) were selected comprising urban and rural areas. The 4 clusters comprised of three PHCs (primary health centre) from rural area and one Municipal ward from urban area which were randomly selected. According to the guidelines on ELF (2009), PHCs were classified in three categories high, medium and low on the basis of coverage reported by concerned PHC. From each category one PHC was selected at random and from each PHC or Municipality, one village/subcentre or ward was selected randomly. In this way 120 households were surveyed from each district and as such total of 480 households were selected.[10]

Results:

Report given by the Government of Jharkhand shows non uniform trend of MDA coverage in all the four districts during

2009-2011 (Table no 1). There was a significant decline in MDA coverage during

Table 1: District-wise MDA coverage (%) by Government of Jharkhand.

DISTRICTS	MDA 2009			MDA 2010			MDA 2011		
	Eligible population	No. of persons received drug	Coverage (%)	Eligible population	No. of persons received drug	Coverage (%)	Eligible population	No. of persons received drug	Coverage (%)
Ranchi (including Khunti)	3017113	2601495	86.22%	3086508	2176013	70.5%	3157497	1312296	41.56%
Gumla	836609	797390	95.31%	855851	852900	99.66%	921614	880470	95.54%
Sahibganj	981257	649668	66.21%	1003826	723652	72.09%	1026913	890893	86.75%
Hazaribagh (including Ramgarh)	2407281	2088912	86.77%	2462648	2115517	85.90%	2519288	2135995	84.78%
Total	7242260	6137465	84.74%	7408833	5868082	79.20%	7625312	5219654	68.45%

specified period in Ranchi (including Khunti) district as 86.22% and 41.56% in 2009, 2010 and 2011 respectively. Decline of MDA coverage was marginal in Hazaribagh (including Ramgarh) as 86.77%, 85.90% and 84.78% respectively during the same period. MDA coverage in Gumla district shows a fluctuating trend although more than 95% coverage was maintained in all the three years 95.31%, 99.66% and 95.54%. As per Jharkhand government report, Sahibganj was the only district among these four districts where MDA coverage proportion has improved over years being 66.21%, 72.09% and 86.75% in 2009, 2010 and 2011. Overall there was a decline in MDA coverage in these four districts being 84.74% in 2009, 72.20% in 2010 and 68.45% in 2011 (Table no.1). There was no clarity about compliance rate in Jharkhand Government data.

Midterm independent evaluation survey conducted by PSM department of RIMS addressed both coverage and compliance rate.(Table no. 2) All the four districts shows initial increase in MDA coverage rate followed by decrease in coverage rate. MDA coverage in Ranchi (including Khunti) district was found as 58.97%, 63.04% and 33.54% in 2009, 2010 and 2011 respectively. Similar trend were seen in Gumla district (48.37%, 49.59% and 38.39%) ; Sahibganj 55.17%, 57.78%, 41.62%) and Hazaribagh (including Ramgarh) being 61.75%, 66.55% and 45.10% respectively during the same time period. Overall MDA coverage as in study conducted by PSM department shows similar trend 56.04%, 59.22% and 39.64% in 2009, 2010 and 2011 respectively (Table no.2).

However, compliance rate over specified time period shows increasing trend in all four districts (Table no 2). Compliance rate in Ranchi (including Khunti) being 24.02%,26.47% and 33.54%; Gumla 18.85%, 29.54% and 55.74%; Sahibganj 28.57%, 30.97% and 56.64%; Hazaribagh (including Ramgarh) being 12.86%, 17.89% and 59.59% during 2009, 2010 and 2011 respectively. Overall MDA compliance percentage during same time period in all four districts shows increasing trend seen as 20.96%, 25.79% and 55.59% during same period (Table no 2).

Table 2: Evaluation of MDA coverage (%) and compliance (%) (RIMS, RANCHI.)

DISTRICTS	MDA 2009			MDA 2010			MDA 2011		
	Eligible popu-lation	No. of persons received drug (Coverage %)	Compliance %	Eligible popu-lation	No. of persons received drug (Coverage %)	Compliance (%)	Eligible popu-lation	No.of persons received drug (Coverage %)	Compliance (%)
Ranchi (including Khunti)	607	358 (58.97%)	86 (24.02%)	617	389 (63.04%)	103 (26.47%)	632	212 (33.54%)	103 (48.58%)
Gumla	614	297 (48.37%)	56 (18.85%)	621	308 (49.59%)	91(29.54 %)	612	235 (38.39%)	131 (55.74%)
Sahibganj	609	336 (55.17%)	96 (28.57%)	604	349 (57.78%)	108 (30.97%)	615	256 (41.62%)	145 (56.64%)
Hazaribagh (including Ramgarh)	604	373 (61.75%)	48 (12.86%)	613	408 (66.55%)	73(17.89 %)	623	281 (45.10%)	168 (59.78%)
Total	2434	1364 (56.04%)	286 (20.96%)	2455	1454 (59.22%)	375 (25.79%)	2482	984 (39.64%)	547 (55.59%)

Discussion:

The effectiveness or success of LF elimination depends on the consumption (compliance) of the drug by the affected population and intermediary evaluation of the program. Thus compliance should be considered as the major criterion during MDA campaign along with drug distributed, for which it is necessary to accentuate "on the spot" drug consumption[7]

The present study showed that there is a marked difference between the data shown by the Government and the independent evaluation done by the Dept. of PSM regarding drug coverage in the four districts during three years. As per the report of Independent Evaluation done by PSM Department some of the barriers for poor compliance of drug were reluctant to swallow drug and being not acquainted with the programme. People had a general perception that when long duration treatment for LF could not cure the patients how could a single course therapy would be effective. Some of them were reluctant to swallow drug empty stomach. There was no scientific knowledge about the disease among population due to ineffective IEC activities. Although officers claim of miking and door to door campaigning, but no banners, posters and wall writing could be seen in the field. [10]

Most of the people were not available at home during the morning hours, so the drug distributors handed over the tablets to any member of the family for the whole family thereby reducing the compliance. Thus there is a definite need to ensure that the drug distributor meets the person for which he may visit the home in the evening for the missed persons of the family. Some other barriers were like no return mechanism of unused DEC+ ALB tablets after the completion of the campaign and these were lying with the districts to periphery and other agencies. Drug distributor training had not been organised in any district/PHCs. They only got a sensitization briefing about the activities

during monthly meeting. Some of the Medical Officer in charge expressed their views that they did not get adequate fund for remuneration to the drug distributor. A large number of persons could not recollect distribution of tablets as the MDA evaluation survey was carried out six months later (recall bias). Independent evaluation needs to be done within six months after the completion of the programme to avoid recall bias. Recruitment of more field staff is needed for door to door visits to have effective coverage and on spot drug administration.[10]

It has been noticed that though the compliance rate was low in all the three years, there is a rise in trend of compliance rate from 20.96% (2009), 25.79% (2010) to 55.59% (2011).Though the compliance rate has increased but still coverage in all the four districts could not be achieved >85% which is an essential criteria to eliminate lymphatic filariasis. The limitation of this study is that as it is record based study, the reasons for increase in compliance rate even though with decrease coverage could not be ascertained. This area needs to be explored further.

Conclusion:

There is a marked difference in the MDA coverage data given by the Government and that surveyed by RIMS. MDA coverage as surveyed by RIMS in all four districts still lags behind at least 85% coverage. The compliance in all the four districts is also not satisfactory. The study highlights the need for identifying factors responsible for low coverage and compliance of the drug among the people of Jharkhand. Compliance rate of DEC+ALB is a matter of great concern and needs immediate attention or else it may not have any impact on the disease burden and elimination of lymphatic filariasis will be a far cry in the state of Jharkhand.

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