Original Article

COMPARISON OF COVERAGE AND COMPLIANCE OF MASS DRUG ADMINISTRATION 2012 IN SURAT, INDIA

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ABSTRACT

Context: Filariasis, an infectious tropical disease is a major public health problem in India but remains neglected. This study was conducted with an objective to evaluate and compare the coverage and compliance of Mass Drug Administration and associated factors in Urban and Rural area of Surat district, Gujarat, India.

Methods and materials: This cross sectional study involved survey of Urban and Rural area of Surat district covering 128 household in each. A pretested questioner was used to collect data regarding administration of Diethyl Carbamazine (DEC) and Albendazole (ALB) to eligible population as a part of routine MDA activity. The data was analysed using Epi info software.

Results: The coverage of antifilarial drug was more than 90% in both areas without significant difference. The compliance rate, the effective coverage rate and Coverage Compliance Gap were 82.4% , 76.1 % and 17.6% respectively in urban areas which were better than those in rural areas.

Conclusion: The effective coverage rate after taking into account the coverage and compliance was less than the target of 85 percent which is needed for eradication and elimination of Filariasis. The urban areas had higher effective coverage rate than rural areas. More emphasis must be given on spot consumption of the drug.

Key words: Filaria, Mass Drug Administration, Comparative study, Surat urban and rural

INTRODUCTION

Filariasis, an infectious tropical disease is a major public health problem in India of which approximately 65% live in the WHO South-East Asia Region.[1,2] In India, the prevalence of filarial is next only to malaria, in spite of this it is a neglected disease.[1] Indigenous cases have been reported from about 250 districts in 20 states/Union Territories including Gujarat.[1] Surat district is one of the district endemic for Filariasis in Gujarat state.[1] The strategy is based on two key components: firstly, interrupting

transmission through annual large-scale treatment programmes, known as mass drug administration(MDA), implemented to cover the entire at-risk population; secondly, alleviating the suffering caused by lymphatic Filariasis (LF) through morbidity management and disability prevention.[2]

The National Health Policy 2002 aims at Elimination of Lymphatic Filariasis by 2015.[3] The strategy for achieving the goal of elimination is by Annual MDA of DEC. In pursuance to achieve this, Government of India during 2004 initiated MDA with annual single dose of DEC tablets to all the population living at the risk of Filariasis.[4] MDA of DEC & Albendazole (ALB) was undertaken in Surat city from 1st March to 7th March and in Surat district from 11th March to 13th March.

The present study was undertaken to evaluate and compare the coverage and compliance of MDA and factors associated with it in SMC Surat (Surat urban) and rest of the Surat district (Surat rural) of Gujarat, India and to provide necessary recommendation based on the study findings.

MATERIALS AND METHODS

This cross sectional study evaluates coverage and compliance of MDA programme undertaken in Surat city in areas under Surat Municipal Corporation (SMC) i.e. Surat urban, from 1st to 7th March and in rest of the Surat District i.e. Surat rural from 11th to 13th March, in Gujarat. As a part of MDA activity house to house visits were made by DDs and DEC & ALB was administered to the eligible population which excluded children under 2 years, pregnant women and severely ill person.[7] The DDs have been instructed to persuade the eligible population to consume tablets on the spot and avoid taking tablet empty stomach.[7] Evaluation of MDA was carried out by the authors with the help of post-graduates of Community Medicine department of our college within three weeks duration after the MDA activity. While evaluation of MDA in elimination of LF was conducted by undertaking Household Survey in four selected clusters of SMC, Surat and Surat district as per NVBDCP guidelines.[7]

Selection of the Survey area: Four clusters were randomly selected using random number table from Surat urban and Surat rural, for the post MDA survey. The survey was done two weeks after the MDA, and coverage reported by the health system was used to select the clusters. Selection of cluster was done differently from that of criteria given in NVBDCP guidelines.[7] There was no PHC in the falling in the SMC, Surat so we selected one-one UHC from four different zones of the Surat city randomly. Selection of clusters in post MDA survey in Surat urban and Surat rural was as per criteria of >95% of eligible population as per report of MDA program 2011-2012. A total of 32 households (HHs) in each cluster were selected in such a way that the entire ward/village was represented. For this purpose, the area was divided into four quadrants, and in each quadrant, a central point was identified and the first house was selected randomly (any number between 1 and 9) and thereafter another seven HHs (total eight) serially (open with available family members) were covered. The exercise was repeated in other three quadrants. In fact this was an improvement over 30HHs suggested per cluster by NVBDCP for evaluation.

A total of 128 households from four clusters, for Surat SMC and Surat District each, were selected. All data were collected by using pre-designed and structured questionnaire. One individual from each house, preferably head of the family was interviewed after obtaining informed consent. If the head of the family was not present the elder most individual of the household was interviewed. The data was compiled and analysed by using Microsoft excel and Epi info.

RESULTS

Our study comprised of 128 households from 4 clusters were surveyed for MDA from both Surat urban and Surat rural i.e. 256 households. The total population in Surat urban and Surat rural is 1202, while the total eligible population was 1163. The eligible population comprised more than 95% of total population in both areas. The coverage i.e. the population to which the drug is imparted is more than 90% of the eligible population and found marginally higher in rural areas than urban areas, but the compliance rate and the effective coverage was higher in urban areas with a narrower CCG (refer table 1). Odds ratio was calculated to know the association of coverage with type of area under coverage. Since the evaluation was carried out in a small sample so to get the estimates for entire

population covered, 95% confidence intervals of the odds ratio for effective coverage were also calculated. According to table 1, there is statistically significant difference between the coverage of Surat urban and Surat rural areas as well as the compliance and the effective coverage rate. The P value is less than 0.05 and the 95% CI of Odds ratio does not include 0 or 1 (refer table 1)

Table 1: Comparison between Surat urban and Surat rural

Variables	Surat Urban	Surat Rural	OR (95% CI)	p-Value
Total no. of households	128	128	-	-
Total population	589	613	-	-
Eligible population	566(96.1%)	597(97.4%)	-	-
Coverage*	523(92.4%)	570(95.5%)	0.58(0.35,0.95)	0.03
Compliance#	431(82.4%)	400(70.2%)	1.99(1.49,2.66)	<0.05
Coverage compliance gap(CCG)	17.6%	29.8%	-	-
Effective coverage rate$	76.1%	67.0%	1.57(1.22,2.03)	<0.05

*- Out of total eligible population; #- Out of total coverage population;
$- (Compliant population/Eligible population) X 100

Table 2: Various reasons of non coverage of eligible population by DD in Surat District

Reasons	Urban(%)(N=43)	Rural(%)(N=27)
Team did not visit/ people missed by DD during visit	23 (53.0)	18 (67.0)
Person not available at their residence during visit of DDs	11(26.0)	9 (33.0)
Team visited the house but drugs not given	09 (21..0)	-

Among the various reasons of non-coverage of eligible population by DD, the chief reason was people were missed by the drug distributor teams. While other common reason was person was available at their residence during house to house visit of DDs. While there was some proportion of person who had been visited by the team but was not given the drug, while in the Surat rural there were no such cases.

Table 3: Reasons for non compliance in urban and rural area of Surat district

Reasons	Urban (%) (N=92)	Rural (%) (N=170)
Forgot/Forgot to take drugs after meal	61 (57.0)	83 (48.8)
Don't feel need to take drug	09 (8.3)	34 (20.0)
Don't like to take drug	07 (6.4)	02 (1.2)
Unavailable at home during visit of DD	-	31 (18.2)
No specific reason given about not consuming the drugs	-	17 (10.0)
Will take drug after consulting family doctor	-	03 (1.8)
Drugs given by DDs lost in house	06 (5.5)	-
Drugs not consumed due to fear of side effects	06 (5.5)	-
Drugs not consumed due to other illness	02 (1.8)	-
DD didn't advice to take drugs	01 (0.9)	-

The main reason for poor compliance in both Surat urban (57%) and Surat rural (48.8%) was the forgetfulness on the part of the person. The other 2 common reasons were the unfelt need to take drug and dislike to take drug. Other than these, one of the major reason in Surat rural were the unavailability of person at home during visit by DDs. There were some different reasons in Surat rural and Surat urban (refer table 3)

DISCUSSION

The concept of MDA is to approach every eligible individual in the target community and administer annual single dose of anti-filarial drugs (DEC+ALB). This annual dose is to be repeated every year for a period of 5 years or more aiming at minimum 85 % actual drug compliance. A high coverage (> 85%) is essential

to achieve the interruption of transmission and elimination of disease in India.[7]

In our study we found that coverage was slightly better in Surat rural than in Surat urban but the effective coverage rate was better in Surat Urban than in Surat rural. According to a previous study done by Kumar et al in 2006 in six district of Gujarat including Surat reported that the coverage in Surat district to be 89.2% while the effective coverage in Surat to be 80.2 % while average of all 6 district namely Amreli, Navsari, Porbandar, Rajkot, Surat and Valsad was found to be 76%.[5] The effective coverage was marginally better in rural areas than urban areas.[5] The assessed coverage of distribution as per ICMR study was significantly higher in rural areas (65-73%) of Tamil Nadu compared to urban areas (40-45%).[8] In Kerala these figures were 72-82% in rural areas and 67-85% in urban areas respectively.[8] According to a study by Nirgude et al in Nalgonda district of Andhra Pradesh found that coverage in rural area was 71.8-96.8% and 75.9% in urban area.[9] Karmakar P Ray et al also reported higher coverage and compliance rate(72.87% & 70.47%) in rural area as compared to urban areas (14.22% & 56.25%).[6] The higher coverage in rural areas than urban areas might be due to the fact that the DDs must might be familiar with the people in the rural areas. Persons missed by the team and person not available at home were major reasons for non coverage as the house to house visit by DDs was carried out during the office hours i.e. 9 am to 5 pm so the person might not be at home during this period. While in urban areas there were a proportion of households in spite of being visited were not given drug was negligence on the part of the DDs. Ideally the coverage has to be 100%.

The main reason for poor compliance in both Surat urban (57%) and Surat rural (48.8%) (table 3) was the forgetfulness on the part of the person. Similar result was found in study conducted by Nirgude et al with forgetfulness on the part of person accounting for 19% on non-compliant population.[9] While other 2 common reasons were the unfelt need and dislike to take drug. While some reasons for non-compliance different in both areas. Other than these there were different reasons for non compliance in Surat urban and Surat rural areas (refer table 3). According to our study Filariasis is not perceived as a major public health problem because out of 256 clusters none of them had ever seen a case of lymphoedema.

The coverage compliance gap (CCG) in Surat urban was less than that in Surat rural (refer table 1). According to Kumar et al the CCG was found to be 10.1% in Surat district while the CCG was found to be marginally narrower in rural areas which is contrary to our study.[5] Ideally, the CCG should be zero and all should be made in this direction. In order to be successful this coverage should be 85 percent or above. When our system could reach to an eligible person and hand over to him the dose of the drug, the person must consume the drug and preferably in front of the distributor. Kumar P et al reported that the DD hardly insisted on supervised "on the spot" administration of drug.[5] This gap can be minimized by educating and motivating the community for taking the drug. Very high or even universal coverage will be of no use if the compliance is poor. Compliance to MDA largely depends on the approach of the drug distributor in implementation of MDA as per guidelines.[7]

The fear of side-effects of was not a significant factor for non-compliance. According to study by Nirgude et al most common cause of non compliance to DEC was fear of side effects among the beneficiaries (47.51%).[9] Out of 831 persons who consumed DEC & Albendazole, no significant case of side effects (chakkar, headache & pain in abdomen) were detected following consumption of DEC & Albendazole.

The effective coverage rate was higher in Surat urban than Surat rural (table 1). This may be due to the fact that people in Surat urban are more literate and aware than those in Surat rural.

Information Education Communication activity helps to bridge the knowledge gap and it is an important and very cost-effective tool to improve both coverage and compliance of MDA. During post MDA coverage evaluation, faculty members interviewed one articulate member (preferably head of family) to find out their knowledge about lymphatic filariasis, status of IEC and its sources if any. People were just anticipating the program because it was conducted in year 2010. Otherwise they were totally unaware about the program of this year. Most of the respondents suggested the electronic media will be the most effective way of the awareness about the MDA activity in future.

CONCLUSIONS & RECOMMENDATIONS

The coverage itself was not 100 percent. The coverage was marginally higher in the rural

areas, but the effective coverage was less in rural areas. The target of 85% effective coverage rate remains to be achieved. The urban areas are nearer to this target. At many places DDs missed out the families without giving them drugs especially in high rise buildings. Preparation of good quality village/ward level micro-plan and ensuring that each DD will not cover more than 50 families a day will help to improve the coverage.[7] Also supportive supervision of the work of DDs by supervisors (MO, PHC/Health Assistants) and independent external monitors during the house to house should be undertaken. There is a sheer need for more effective drug delivery strategies are charted out as per locally in consultation with community leaders, school teachers and under close supervision by medical officer of concerned PHC. The effective coverage rate after taking into account the coverage and compliance was less than the targeted of 85 percent needed. Most of the people of covered areas had received DEC & ALB from DDs but did not consume on the spot due to lack of motivation from DDs and also lack of interest of people to consume the given drugs. Supervised DEC & Albendazole intake was very poor and the commonest answer was "will take after meal". A small packet of glucose biscuit (worth Rs.1/ Rs.2) can be provided to the person to avoid the intake of the drugs on empty stomach. An effort should be made to increase "on the spot consumption". This alone can bring down the CCG considerably. The DDs and supervisor hardly cross checked any houses where the drugs were given. Such type of things must be rectified in future rounds of MDA. As per experience of DDs, at a single point of time when we provide 3 DEC tablets (100 mg) and 1 ALB tablet as an adult dose, people show their fear to take 4 tablets on the spot. So, suppose we provide single dose of DEC (300mg) and 1 Albendazole tablet (total 2 tablets instead of 4), it may give good psychological impact in the mind of community people and ultimately we can reduce our CCG.. Pre-MDA IEC must be placed in an appropriate manner. It should be extensive through all possible channels such as TV, cable, recorded messages and SMS (mobile and land line phones) and should be done just few days before the campaign. Big celebrity, senior political leaders, administrators, religious leaders, can be asked to endorse this program. Involvement of local level voluntary workers on payment basis will be very effective for future rounds of MDA. Extensive help of local area private practitioners must be taken especially for resistant community people of their areas for significant reduction of CCG. Majority respondents when asked failed to suggest any measure for increasing awareness and improving program at community level.

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