Knowledge on lymphatic filariasis and the response to July 2002 mass treatment campaign in two communities in the Galle district

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(Index words: Mass drug administration; diethylcarbamazine; albendazole; information, education, communication program; home delivery of drugs; adverse effects)

Abstract

Objective To ascertain the knowledge on filariasis and response to the July 2002 mass treatment campaign in two sample populations.

Design Application of pre-tested questionnaire by direct interviews of individuals from randomly selected streets.

Methods Study areas were a coastal community in Unawatuna (population sample 381), and an inland community in Baddegama (population sample 236) in the Galle district. They were interviewed twice, 4 weeks before the mass drug administration (MDA) and 4 to 7 days after.

Results The sample population of Unawatuna had a greater awareness of the clinical and parasitological features of the disease ($p=0.0003$) and the drug treatment ($p=0.00380$) than that of Baddegama. Only 5.5% of the combined sample attributed the cause of filariasis to a parasitic worm. However, over 70.0% of them knew that transmission was through mosquito bites.

Volunteers formed 87.5% of the work force used for drug distribution in Unawatuna and 70.1% in Baddegama. The balance work force were *Grama Niladaris* and Public Health Midwives. Drugs were received by 76.9% of the Unawatuna sample compared with 89.0% at Baddegama

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($p < 0.001$). Among those who received the drugs, consumption was 91.8% in Unawatuna and 96.2% in Baddegama. Taking the two communities together adverse effects were experienced by 22.9%. These effects in night time drug consumers (10.4%) were significantly less than in day time consumers (19.8%) ($p < 0.005$). The adverse effects were sleepiness (37.8%), malaise (28.2%), headache (16.8%), vomiting (5.1%), nausea (4.5%) and fever (3.9%).

The message of mass treatment was carried to the community by the people themselves on the eve and on the day of drug distribution. Over 95% agreed that in future programs drugs should be delivered to their homes.

Introduction

Recent advances in treatment methods for lymphatic filariasis (LF) both for controlling transmission and for simple and successful approaches to morbidity control, along with improvements in techniques for diagnosing the infection have led to the World Health Organisation to initiate a program to eliminate the disease globally (1). The pharmaceutical company SmithKline Beecham has donated all the albendazole needed to ensure the success of the elimination program (2). Given this background, 73 countries with LF have set up their own elimination programs (2,3,4). On the same guidelines Sri Lanka has organised a national plan for the elimination of lymphatic filariasis (5).

The main strategy for elimination is the interruption of transmission by reducing the microfilaria load in the community. This is achieved by mass drug administration (MDA) of a single dose of diethylcarbamazine citrate (DEC) 6mg/kg to clear microfilaraemia and sustain this over one year, in combination with albendazole (400 mg) which enhances microfilarial clearance (6,7). In addition, albendazole has a dramatic impact on intestinal helminths which are usually endemic in the LF endemic areas (8).

The first national MDA program covering the entire endemic region was in 1999 using only DEC (6mg/kg) giving a coverage of 62.7% (9). In 2002 with albendazole available to cover the entire endemic region an elaborate social mobilisation and information, education, communication (IEC) component supported by the World Health Organisation (10) was launched, followed by the first MDA program with the drug combination of DEC and albendazole, on 28 July 2002.

We administered two pre-tested questionnaires by direct interviews in two communities in the Galle district, the first one 4 weeks before the MDA and the second 4 to 7 days after, to investigate their knowledge of LF and response to the MDA with a drug combination.

Methods

The study was conducted in two communities living in Unawatuna and Baddegama in the Galle district. Sample populations for the study were from randomly selected streets. One or two members of every household in a selected street were enrolled for the study.

Unawatuna is a coastal suburb of Galle and a recently urbanised tourist resort on the southern city limits lying along the main highway. The people live in scattered housing located along side roads. Baddegama is an inland rural area located 8 miles from Galle. Its open rural surroundings consist of rice fields and some low grown tea and coconut plantations. The housing is scattered as in Unawatuna.

Two questionnaires were applied by direct interview on the two sample populations of the communities, 381 from Unawatuna and 236 from Baddegama. Most of the two samples were females, 70.9% from Unawatuna and 66.9% from Baddegama.

The questionnaire before the MDA aimed at information on their awareness of filariasis, sources of information, knowledge on the cause of the disease, its mode of transmission, the treatment given and whether they had actually seen a filarial patient. We inquired whether their blood was tested for microfilariae in night surveys, whether the infected people received treatment and whether they could recall any discomfort they may have experienced.

The post-MDA questionnaire was about the response of the community to the IEC program immediately before drug distribution, how the people received the drugs, whether they were satisfied with the method of distribution, the time of drug consumption and any adverse reactions to the drugs. A final question was whether they would accept the drugs in a repeat program next year.

The data were double entered and validated in SPSS 7.2 computer software. Association regarding knowledge on filariasis and response to MDA between the two communities was examined by the chi square test.

Results

Both communities were aware of the disease through the same sources: health personnel, 24.0% in Unawatuna and 24.2% in Baddegama; radio and television, 23.2% Unawatuna and 24.8% in Baddegama. However, Unawatuna had a greater awareness of clinical and parasitological features of the disease ($p=0.0003$) and the drugs used in treatment ($p=0.0038$) than in inland Baddegama. Only 6.8% of the people in Unawatuna and 4.2% in Baddegama knew that the disease was caused by a parasitic worm, 73.3% from Unawatuna and 69.8% from Baddegama stated that transmission was due to mosquito bites. The Unawatuna sample with 90.5% people screened for microfilariae had significantly wider coverage than Baddegama with 39.2% ($p < 0.0005$). Correspondingly there was significantly more treatment coverage in Unawatuna (69.3%) than in Baddegama (44.2%), $p < 0.0005$.

The MDA program was known to 44.8% people in Unawatuna and 35.6% in Baddegama. Among them 25.0% from Unawatuna and 29.0% from Baddegama learnt about it from health personnel; 25.2 and 26.2% from television and radio. Although the intensified IEC campaign during the last two weeks before the July 2002 MDA program had obvious benefits, awareness reached 99.6% on the eve

and on the day of drug distribution when people heard about it from the drug distributors and carried the message to others in the community.

A number of volunteers had been recruited to join the Health Department field staff and *Grama Niladaris* in the distribution of drugs to every home in the community. The aim was for one person to deliver drugs to about 50 homes and ensure that the drugs were consumed. Volunteers comprised 87.5% of the work force in Unawatuna and 70.1% in Baddegama. 3.4% of the sample population from Unawatuna and 0.4% from Baddegama had collected their drugs from the office of the Medical Officer of Health. In the drug distribution program 88.9% of the two communities received the drugs on the first day, 8.9% within the week and 1.8% after one week.

293 (76.9%) of the Unawatuna community and 210 (89.0%) of Baddegama received the drugs ($P < 0.0001$). Of them 269 (91.6%) in Unawatuna and 202 (96.2%) from Baddegama consumed the drugs. 88 (23.1%) in Unawatuna and 26 (11%) in Baddegama did not receive the drugs.

Adverse reactions to the drugs were recorded in 22.8% in Unawatuna and 23.0% in Baddegama. Combining the two communities, those who consumed the drugs during the night had significantly less adverse reactions (10.4%), than those who consumed during the day (19.8%) ($P < 0.005$). The adverse reactions recorded were sleepiness, malaise, headache, vomiting, nausea, fever and diarrhoea.

95.5% from Unawatuna and 96.8% from Baddegama agreed to accept the drugs in a similar program next year. 99.2% of the communities taken together stated that in future programs the drugs should be home delivered.

Discussion

It was reported that the MDA efforts of the previous years were hampered by the absence of good social mobilisation and inadequate preparation of communities for drug treatment (10). The goal of the MDA program was to have at least 80% of all eligible households consume the drug. For the success of the IEC campaign it was necessary to assess community awareness, and misinformation and current beliefs of the community of the disease (4). This would help to plan a well-directed IEC campaign. The MDA was directed towards achieving and sustaining a high coverage of drug distribution. The coverage depended on perception of LF as a major health problem in the community, perceptions of the disease as a serious threat to the individuals and their families, and confidence in the treatment that was being offered (4).

Our study in Galle fulfilled this requirement of the national LF elimination program. The two communities located 10 miles apart lived in two ecologically different areas. People of Unawatuna had a significantly greater awareness of the parasitological and clinical features of the disease and its treatment than the people of Baddegama. This was due to the fact that Unawatuna was subjected to

the national filariasis control program and hence a greater exposure to the disease and its treatment than Baddegama. On the cause and transmission of the disease Unawatuna showed a greater awareness than Baddegama. Consistent with this, more people of Unawatuna were aware of the July 2002 MDA. Volunteers had carried out a commendable job, distributing the drugs to 81.5% of the two sample populations, of whom 93.7% had consumed them.

In a study conducted in the Gampaha district shortly after the MDA of May 2001 using only DEC where the principal method of drug distribution was through centres arranged by the Medical Officers of Health (11), only 66.6% had obtained the drugs. The total drug coverage rate reported by the Health Ministry in the May 2001 MDA varied from 48.4% to 80.5% (9). These results and the availability of albendazole for the whole endemic area led the Ministry to an improved effort in the July 2002 MDA with an elaborate social mobilisation IEC component before drug distribution by home delivery.

The IEC program had achieved success through the districts of the endemic region. However, in the two communities we examined the most effective method of popagating the message was by the residents themselves when the drug distributors were in the area performing their duty.

In carrying forward the program for the elimination of lymphatic filariasis in the country the plan is to repeat the MDA annually for the next five years (12). A well-trained volunteer force, an effective IEC program and an improved response from the community will ensure its success.

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