Ghana - Low Microfilaremia Levels in Three Districts in Coastal Ghana with at Least 16 Years of Mass Drug Administration and Persistent Transmission of Lymphatic Filariasis

Dziedzom K. de Souza

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Identification

SURVEY ID NUMBER
NMIMR_LYMPHATIC_FILARIASIS_2018

TITLE
Low Microfilaremia Levels in Three Districts in Coastal Ghana with at Least 16 Years of Mass Drug Administration and Persistent Transmission of Lymphatic Filariasis

COUNTRY

Name	Country code
Ghana	GH

KIND OF DATA
sample survey data[ssd]

Version

VERSION DESCRIPTION
v1

Scope

NOTES
Ghana has been implementing mass drug administration (MDA) of ivermectin and albendazole for the elimination of lymphatic filariasis (LF) since the year 2000, as part of the Global Programme to Eliminate Lymphatic Filariasis (GPELF). It was estimated that 5–6 years of treatment would be sufficient to eliminate the disease. Tremendous progress has been made over the years, and treatment has stopped in many disease endemic districts. However, despite the successful implementation of MDA, there are districts with persistent transmission. In this study we assessed the epidemiology of LF in three adjoining districts that have received at least 16 years of MDA. The assessments were undertaken one year after the last MDA. 1234 adults and 182 children below the age of 10 years were assessed. The overall prevalence of circulating filarial antigen in the study participants was 8.3% (95% CI: 6.9–9.9), with an estimated microfilaria prevalence of 1.2%. The microfilarial intensity in positive individuals ranged from 1 to 57 microfilariae/mL of blood. Higher antigen prevalence was detected in males (13.0%; 95% CI: 10.3–16.2) compared to females (5.5%; 95% CI: 4.1–7.2). The presence of infection was also highest in individuals involved in outdoor commercial activities, with the risks of infection being four- to five-fold higher among farmers, fishermen, drivers and artisans, compared to all other occupations. Using bednets or participating in MDA did not significantly influence the risk of infection. No children below the age of 10 years were found with infection. Detection of Wb123 antibodies for current infections indicated a prevalence of 14.4% (95% CI: 8.1–23.0) in antigen-positive individuals above 10 years of age. No antibodies were detected in children 10 years or below. Assessment of infection within the An. gambiae vectors of LF indicated an infection rate of 0.9% (95% CI: 0.3–2.1) and infectivity rate of 0.5% (95% CI: 0.1–1.6). These results indicate low-level transmission within the districts, and suggest that it will require targeted interventions in order to eliminate the infection.

Coverage

GEOGRAPHIC COVERAGE
18 LF endemic villages in the AhantaWest, Nzema East and Ellembele Districts in the Western Region of Ghana

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
Dziedzom K. de Souza	Department of Parasitology, Noguchi Memorial Institute for Medical Research, College of Health Sciences, University of Ghana, Legon-Accra, Ghana

FUNDING AGENCY/SPONSOR

Name	Grant number	Role
EDCTP2 programme supported by the European Union	98595	The design of the study, in the collection, analysis and interpretation of the data, or in the publication of the study results.

OTHER IDENTIFICATIONS/ACKNOWLEDGMENTS

Name	Role	Affiliation
Regional and district health management teams	Support towards the study	Government
NTDP	Implementation of the study	Government

Sampling

SAMPLING PROCEDURE

Study sites were selected following a review of the Neglected Tropical Disease Programme (NTDP) sentinel and spot check site monitoring data, as well as recommendation from the District Health Management Team (DHMT). The sample size determination took into consideration the null hypothesis that an additional MDA is not more effective than the standard single dose per annum treatment, and the alternate hypothesis that an additional MDA is more effective than the standard single dose. With prevalence between sites ranging from 1% to 18%, the sample size was determined assuming an effect size of 0.4, power of 0.80, 37% non-response rate (determined from a previous study). Thus, 80 participants were targeted from each community, with a total of 1440 participants for the entire study.

Data Collection

DATES OF DATA COLLECTION

Start	End
2001	2002

DATA COLLECTION MODE

A computer-assisted personal interviewing (CAPI)

DATA COLLECTION NOTES

A computer-assisted personal interviewing (CAPI) using Census and Survey Processing System (CSPro) was employed to obtain data on age, sex, occupation, place of residence, use of treated bednet, and participation in MDA.

Access policy

CONTACTS

Name	Affiliation	Email

Dziedzom K. de Souza	Department of Parasitology, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon-Accra, Ghana	DdeSouza@noguchi.ug.edu.gh

ACCESS AUTHORITY

Name	Affiliation	URL	Email
Dziedzom K. de Souza	Department of Parasitology, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon-Accra, Ghana	Link	DdeSouza@noguchi.ug.edu.gh

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Data Description

Data file	Cases	Variables