GHANA-IMMIP

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Current status of Onchocercasis control in Ghana

In Ghana onchocerciasis is endemic in 9 out of 10 regions. About 3204 communities from 66 districts are endemic in these 9 regions, and the total population at risk for onchocerciasis in Ghana is about 3.2 million (16%). Ivermectin distribution in Ghana started with the use of mobile teams in 1987. This was followed by Community-Directed Treatment with Ivermectin (CDTI) in 1998 after the devolution of the Onchocerciasis Control program (OCP) in Ghana. Ivermectin treatment started in lymphatic filariasis and onchocerciasis co-endemic areas in 2001 and has undergone a gradual up-scaling to cover 61 endemic districts by 2005. From 2002 to 2007, 3.4 million people were treated through CDTI with coverage ranging from 48.4 to 79.1%. Since 2006, onchocerciasis control has been implemented in the context of Neglected Tropical Diseases Control Programme (NTDCP). Implementation of NTDCP started in April on a pilot basis in 5 regions of Ghana.

The DOLF work will be carried out in the Upper and Lower Denkyira Districts in the Central Region of Ghana - meso-hyperendemic areas for onchocerciasis.

Teams and work:

The above-mentioned partners in Kumasi and Bonn have a longstanding expertise and experience with implementation and performance of placebo controlled, randomized clinical trials in onchocerciasis and lymphatic filariasis. So far more than 11 clinical trials with about 2000 participating patients have been carried out or are ongoing in endemic areas for onchocerciasis and lymphatic filariasis. These trials are funded by e.g. European Union, Bill & Melinda Gates Foundation, VW Foundation, DFG (German Research Foundation).

The collaboration between the partners from Kumasi and Bonn exists since 1998 when the Kumasi Center for Collaborative Research (KCCR) was founded. The KCCR is a joint venture between the Ministry of Health of the Republic of Ghana, the Kwame Nkrumah University of Science and Technology, (KNUST), Kumasi, Ghana, and the Bernhard-Nocht-Institute for Tropical Medicine, (BNITM), Hamburg, Germany and serves as logistical basis for international scientific projects, such as projects co-ordinated by the IMMIP Bonn under direction of Prof. Hoerauf and his scientific staff, in close cooperation with the Ghanaian partners (Dr. Alex Debrah and Prof. Ohene Adjei).
The laboratories at KCCR in Kumasi are equipped among others with microscopes, biosafety hoods, ELISA reader, cooled centrifuges, qPCR cycler, agarose gel electrophoresis, transluminator, -80 °C freezers, deep freezers and fridges. Liquid nitrogen is available. The Centre has internet access at the research and administration block as well as in the guesthouse through the satellite system of KNUST.

A fleet of 12 four-wheel vehicles under the supervision of a maintenance unit are available for fieldwork. In addition are generators to back up power supply.

In particular for the Bonn/Kumasi research projects:

Two permanent laboratories were established for sample processing within the above-mentioned joint clinical trials, one lab for onchocerciasis in Dunkwa on Offin in the Central Region where the DOLF work will be carried out, and one lab in the Ahanta West Region for the work in LF. We work in close cooperation with the Regional District Hospital Dunkwa on Offin where nodulectomies are carried out in a fully equipped, air-conditioned theatre to work under sterile conditions. Another temporary lab exists in the Brong Ahafo region for the fieldwork in onchocerciasis. Accomodation facilities are available in the Central- and Western Region where houses are permanently rented.

At present the research teams consist of 2-4 postdocs, 1-3 MDs, 2 doctoral students, 2-5 nurses, 3 master students, 1 lab technician, 1 field assistant, 3-4 drivers, 1-2 cooks – depending on the needs and incoming work in the study areas.

In our presentation we will provide requested information about the actual situation in onchocerciasis in Ghana, the current status of MDA and the region where the DOLF studies will be performed, including details regarding available labs, scientific staff, field teams, equipment for the fieldwork and sample processing.

Examples of recent publications of our research group related to onchocerciasis and LF:


Korten S, Kaifi JT, Büttner DW, Hoerauf A. Transforming growth factor-beta expression by host cells is elicited locally by the filarial nematode Onchocerca volvulus in hyporeactive patients independently from Wolbachia. Microbes Infect. 2010 Jul;12(7):555-64.


