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The Mectizan® Expert Committee

**Recommendations for the treatment of
Onchocerciasis with Mectizan®
in areas co-endemic
for Onchocerciasis and Loiasis**

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Recommendations for the treatment of onchocerciasis with Mectizan® in areas co-endemic for Onchocerciasis and Loiasis

[Adapted from the Conclusions and Recommendations of the 9th session of the Technical Consultative Committee of the African Programme for Onchocerciasis Control (APOC), Ouagadougou, Burkina Faso, March 2000]

Infection with *Loa loa* can cause central nervous system (CNS) dysfunction both spontaneously and following treatment. In 1999, four deaths in which serious CNS events followed treatment with Mectizan® were reported in Loa-endemic regions of Cameroon. In past years, similar cases may have occurred in Gabon, the Central African Republic, and the Democratic Republic of Congo, but not in Nigeria or Sudan. It is not known why the deaths have occurred almost exclusively in Cameroon and not in other Loa-endemic countries.

The precise distribution of *Loa loa* in Africa is not known; however, it is known to be endemic in humid forest areas of the following countries: Angola, Benin, Cameroon, the Central African Republic, Congo, the Democratic Republic of Congo, Equatorial Guinea, Gabon, Nigeria, and Sudan. The map in Appendix A is based on environmental data (vegetation and remote sensing for humidity/vegetation) and can be used as an indicator of presumptive Loa-endemic areas. Unfortunately, complete data are not yet available for Sudan, Nigeria, or Benin; the map will be updated when the data become available.

The Mectizan® Expert Committee recommends that for onchocerciasis control programs operating in areas known to be endemic, or potentially endemic as indicated by the map, for *Loa loa* one of the following strategies be followed:

A. Programs that provide community-based mass treatment with Mectizan®

1. Program areas where the following apply:

- **Two or more rounds of annual treatment with Mectizan® with at least 60% treatment coverage in each community have been carried out.**
- **No cases of serious CNS dysfunction following treatment with Mectizan® have occurred**
 - a. Continue community-based mass treatment, or the Community Directed Treatment with Ivermectin (CDTI) strategy if an APOC-supported program, and maintain careful surveillance for serious adverse reactions.

- b. Enhance community awareness and education with regard to recognizing and responding to adverse reactions following treatment of *Loa*-infected people with Mectizan®.
- c. Enhance awareness and training of community distributors and all health personnel involved in the program with regard to recognizing and responding to adverse reactions following treatment of *Loa*-infected people with Mectizan®.

2. In all other program areas where one or more of the following apply:

- **No previous treatment with Mectizan®**
- **Fewer than two rounds of annual treatment with Mectizan® have been carried out**
- **Two or more rounds of annual treatment with Mectizan® have been carried out but with coverage of less than 60% in each community**
- **Cases of serious CNS dysfunction following treatment with Mectizan® have occurred**
 - a. Prior to mass treatment with Mectizan®, a Rapid Epidemiological Assessment (REA) should be done in each community to document the endemicity of onchocerciasis as hyper-, meso-, or hypo-endemic. (See Appendix B for explanation of REA.) If a community is hypo-endemic, mass treatment should not be done. (See section B, item 1 below).
 - b. If the community has hyper- or meso-endemic onchocerciasis, treatment with Mectizan® should be carried out over a fixed period of time with a defined period of careful observation by community distributors for days 2-8 after treatment and surveillance by medical personnel for days 3-5 after treatment (where day 1 is the day of treatment).
 - c. Enhance community awareness and education with regard to recognizing and responding to adverse reactions following treatment of *Loa*-infected people with Mectizan®.
 - d. Enhance awareness and training of community distributors and all health personnel involved in the program with regard to recognizing and responding to adverse reactions following treatment of *Loa*-infected people with Mectizan®. The objective of this effort should be early identification of serious CNS dysfunction and prompt referral of patients to a district hospital or designated center where staff is appropriately trained

and supplied for case management. Family members should be encouraged to accompany the patient and provide care.

B. Programs that give individual treatments with Mectizan® to people with proven onchocerciasis

1. Clinic-based treatments:

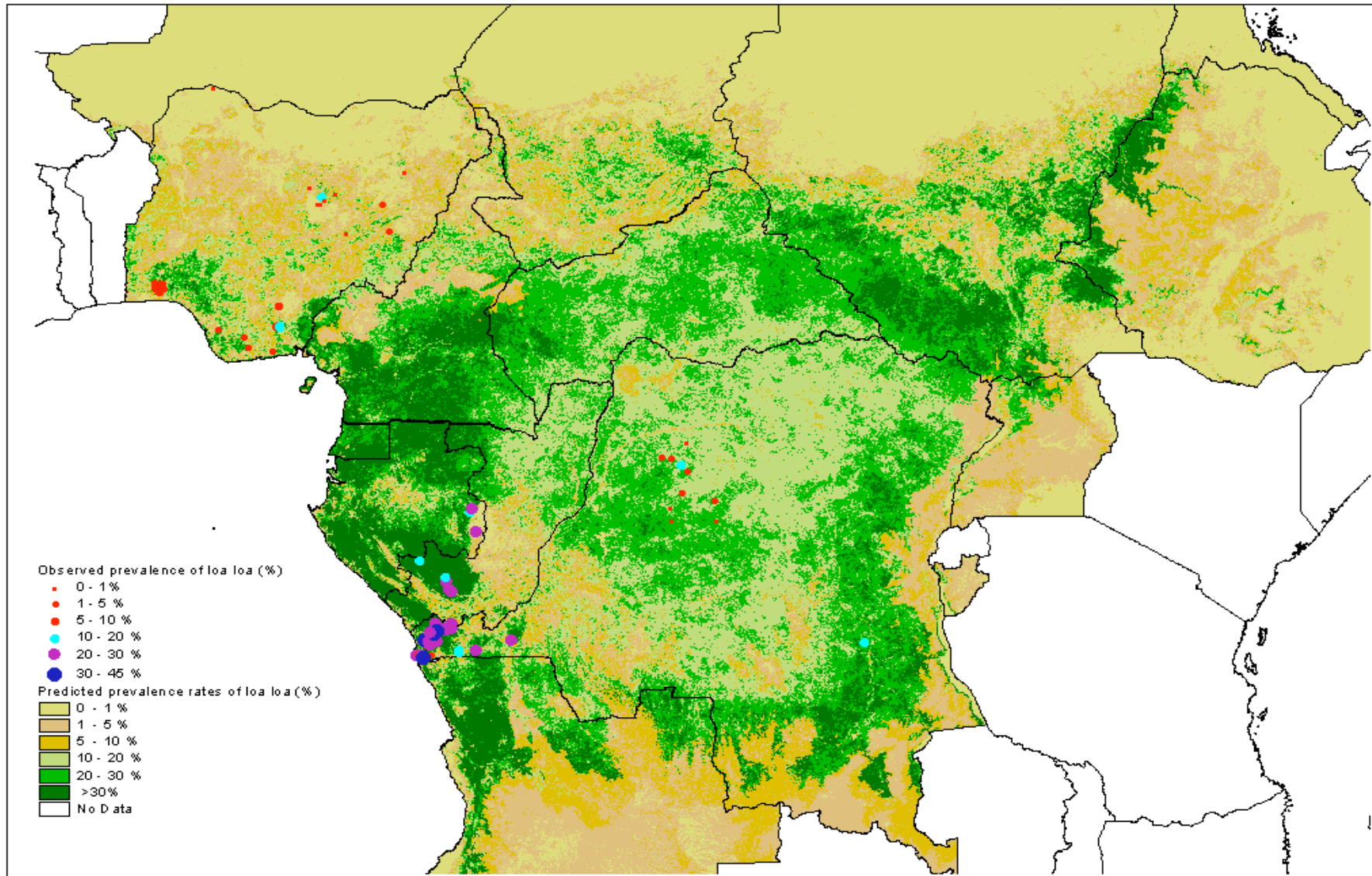
- a. After confirming infection with *Onchocerca volvulus*, but prior to treating with Mectizan®, possible co-infection with *Loa loa* should be assessed. In the absence of hematologic diagnostic methods, patients should be asked questions to determine if *Loa loa* is probably present in their community of residence or employment.
- b. Prior to treating with Mectizan®, the possibility of adverse reactions after treating *Loa*-infected people should be discussed with the patient.
- c. If the patient is at risk of serious adverse CNS dysfunction following treatment with Mectizan®, he/she should be monitored by medical personnel as described above in section A, item 2b and 2c.

These recommendations are intended to minimize complications following treatment with Mectizan®, in known and suspected *Loa*-endemic areas, should they arise. The risk of complications will be further reduced when the distribution of *Loa loa* is delineated and a practical means for determining the intensity of infection is available.

The ultimate decision on how to proceed with community-based mass treatment of onchocerciasis with Mectizan®, in a given country, should be made by the National Onchocerciasis Task Force (NOTF) and the Ministry of Health, which has final authority and responsibility for all decisions. Moreover, the decision on how to proceed with the treatment of individuals with onchocerciasis in clinic-based settings is the responsibility of the individual physician.

APPENDIX A.

**Distribution of *Loa loa*: predicted and observed
(from Thompson *et al.*, 2001)**



From: Thomson M, Obsomer V, Connor SJ *et al.* (2001) Determining the spatial overlap between the distribution of *Loa loa* and onchocerciasis in APOC countries using GIS and Remote Sensing Technologies: Final Report to APOC 15/10/2001. Liverpool School of Tropical Medicine, Liverpool, 2001.

APPENDIX B

DETERMINING ONCHOCERCIASIS ENDEMICITY LEVELS AND THE SELECTION OF COMMUNITIES FOR MASS TREATMENT WITH MECTIZAN®

Methods of Rapid Epidemiological Assessment (REA)

Classically, endemicity levels have been assessed by taking qualitative or quantitative skin snips to determine the prevalence and intensity of onchocerciasis in a community. Intensity is often recorded as the Community Microfilarial Load (CMFL). Unfortunately, skin snipping is costly and time-consuming, requiring skilled personnel, vehicular transport, and microscopic equipment. It is also somewhat unpopular with examinees, and it incurs the risk of transmitting HIV and the hepatitis virus.

Recently, more simple methods of Rapid Epidemiological Assessment (REA) have been developed. One commonly used is determining the prevalence of nodules that is described below.

In almost all environments, the prevalence of nodules is the simplest, most acceptable, non-invasive and reasonably reliable method of REA. It involves determining the prevalence of nodules in a random sample of 30-50 adult males over 20 years of age, who have been resident in the community concerned for at least 10 years and who are engaged in rural occupations. Males are chosen, as they are generally more likely to be heavily infected than females and they are more amenable to examination by palpation. However, in some environments, it may be desirable to include females or to enlarge the sample.

The method demands minimum training of personnel:

- to find and recognize nodules of *Onchocerca volvulus*;
- to examine all likely sites on the body (including iliac crests, greater trochanters, the knees, coccyx, rib cage, scapulae and head);
- to ask the patient whether he knows where he has a nodule; and
- to distinguish nodules from lymph nodes (enlarged or otherwise, and especially those in the groin), lipomata, sebaceous cysts, ganglia, etc.

As a simple rule-of-thumb the percentage prevalence in the community is 5 times the number of nodule carriers in a 30-man REA sample or, alternatively, it may be expressed as 1.5 times the percentage of nodule carriers in the REA sample. For example, if 6 (20%) out of 30 men in the sample had a palpable nodule, then the estimated prevalence of onchocerciasis in the community would be 30% (i.e. 5×6 or 1.5×20).

Once REA is complete, communities are categorized as hyper-, meso-, or hypo-endemic for onchocerciasis according to the criteria in the following table.

ENDEMICITY LEVEL	Prevalence (%) of <i>O.volvulus</i> in:		Percent nodule carriers in REA sample	No. of nodule carriers in 30-man REA sample
	adult males	whole community		
HYPER	80	60	40	12
MESO	40-79	30-59	20-39	6-11
HYPO	20-39	15-29	10-19	3-5
SPORADIC	1-19	1-14	1-9	1-2

Note If skin-snip or nodule data have not been collected in a particular community, classify that community according to the average skin-snip or nodule prevalence in those communities having similar ecological conditions which lie within 10 km of the community concerned and for which data have been collected.

This document has been adapted from Procedural Manual for Ivermectin Distribution Programs (WHO/PBL/93.35) pages 41 and 113.