

## Failure of high dose mebendazole as a microfilaricide in patients with loiasis

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### Abstract

The effectiveness of mebendazole as a microfilaricide in patients with loiasis was studied. The drug regimen was 1 g twice daily for 21 days in adults. During and after treatment, the microfilarial density was unchanged. Therefore, mebendazole has no direct effect on the microfilarial density of *Loa loa*.

### Introduction

Mebendazole probably has a sterilizing effect on adult filarial worms. Microfilaricidal effects have been described in *Brugia pahangi*, *Wuchereria bancrofti*, *Onchocerca volvulus* and *Dipetalonema perstans* (WAHLGREN & FROLOR, 1983). Recently there have also been reports of an effect on *Loa loa* microfilariae (VAN HOEGAERDEN & FLOCARD, 1985; RICHARD-LENOBLE *et al.*, 1985).

### Patients and Methods

The study was performed at the Albert Schweitzer Hospital at Lambarene, Gabon. 7 patients with loiasis were assigned to the treatment group, and given 1 g mebendazole twice daily for 21 days. In the control group, 5 patients were given placebos.

Investigations of the numbers of microfilariae (mf) in peripheral blood, blood count, glutamic oxalacetic transaminase (GOT) and alkaline phosphatase (AP) were carried out before admission, on days 5, 10 and 15 of treatment, after the end of therapy and afterwards, if possible, at monthly intervals. For determination of microfilarial numbers, 0.3 ml and 3 ml each of EDTA-treated blood were filtered through Nucleopore filters (pore size 5 µl) and the microfilariae were counted after Giemsa staining. Blood was collected at 1200 h (noon).

### Results

In the 7 treated patients the microfilarial numbers remained unchanged during treatment, geometric means being: before treatment, 120/ml; day 5, 135/ml; day 15, 65/ml; day 21, 120/ml. 4 of these patients were followed up for a further 70 days, and the geometric mean remained unchanged at 110/ml. 2 patients were followed up for 4 months, and their microfilarial counts remained equally high. Side effects were not reported, no significant alteration in GOT, AP or leucocyte count being found.

In the 5 control patients there was no change in the microfilarial counts (geometric mean before treatment, 160/ml; day 5, 75/ml; day 10, 130/ml; day 15, 95/ml; day 21, 85/ml).

### Discussion

A decrease in mf numbers has been reported under a mebendazole regimen of 2 × 1 g/day (RICHARD-LENOBLE *et al.*, 1985) and even under 3 × 100 mg/day (VAN HOEGAERDEN & FLOCARD, 1985). This is surprising because normally only 5% of an oral dose of mebendazole is absorbed (BRUGMANS *et al.*, 1971). In contrast we failed to see any direct microfilaricidal effect of mebendazole.

In order to test the possibility of a sterilizing effect on adult worms, longer periods of follow-up might have been necessary. Another approach might be to kill the microfilariae with diethylcarbamazine citrate and see whether they reappear in the blood during subsequent treatment with mebendazole.

### References

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