

## Treatment failure of a single high dose of ivermectin for *Mansonella perstans* filariasis

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### Abstract

Infections with *Mansonella perstans* are common in certain parts of Africa and South America. There is no standard treatment at present. We evaluated the effect of a single high dose of ivermectin (600 µg/kg) on microfilaraemia in 7 consecutive patients. No decrease in microfilarial counts could be demonstrated after a follow-up period of 7–56 d.

### Introduction

Infections with the filarial parasite *Mansonella perstans* are common in several areas in Africa and South America. Several treatment schemes have been tried with variable results. Therapy with diethylcarbamazine has a low cure rate (STROHSCHNEIDER, 1956). High dose mebendazole for prolonged periods can clear microfilaraemia (GOLDSMID & ROGERS, 1979; MAERTENS & WÉRY, 1975; WAHLGREN & FROLOV, 1983; VAN HOEGAERDEN *et al.*, 1987; RICHARD-LENOBLE, 1985), but is expensive. The association of levamisole with high dose mebendazole was successful in a limited number of patients (GOLDSMID & ROGERS, 1979; MAERTENS & WÉRY, 1975; BERNBERG *et al.*, 1979). Ivermectin, 200 µg/kg as a single dose, was tried in 5 patients, without significant success (RICHARD-LENOBLE, 1988, 1989). Single dose treatment with ivermectin has been shown to be effective for onchocerciasis and has been used in a number of other parasitic infections (CAMPBELL, 1991; OTESSEN, 1990). The tolerance of a single high-dose of ivermectin (400 µg/kg) has been reported for the treatment of lymphatic filariasis (ADDISS *et al.*, 1991). We decided to evaluate a single high-dose treatment with ivermectin, 600 µg/kg, for the treatment of *M. perstans* parasitaemia.

### Methods

Seven consecutive patients (5 men, 2 women; aged 26–76 years) with *M. perstans* microfilaraemia were identified at the Institute of Tropical Medicine, Antwerp, Belgium. All patients had returned from central Africa and resided in Belgium during the study. After the follow-up period, they returned to Africa. All gave informed consent. The microfilaraemia was determined with the modified Knott concentration technique (using 5 ml of venous blood in 45 ml of formalin). An initial baseline full blood count, absolute eosinophil count, immunoglobulin E and creatinine determinations and liver function tests were done. A single dose of ivermectin, 600 µg/kg, was administered on an empty stomach in the morning, 2 h before the patients were allowed food. Any side effects were noted. Microfilaraemia and the tests described above were again assessed after a variable follow-up period of 7–56 d. The significance of changes in microfilarial densities were determined by the bilateral Wilcoxon signed ranks test.

**Table. *Mansonella perstans* microfilaraemias before and after treatment with a single dose of ivermectin (600 µg/kg)**

Patient no.	Age (years)	Follow-up period (d)	Microfilaria/10 ml blood	
			Before treatment	After treatment
1	60	42	840	2050
2	50	35	26	14
3	52	11	6	12
4	26	7	10	4
5	69	32	14	11
6	36	56	8	14
7	76	45	16	20

### Results

After the follow-up period a median increase of 27% (90% confidence interval: -34% to +87%) in microfilarial counts was observed (Table). No patient was amicrofilaraemic after treatment. No abnormality was detected in the haematological or biochemical examinations. One patient had a mild pruritic reaction, starting 3 h after the tablets were taken and lasting about 6 h. This patient had lived for many years in an endemic onchocerciasis area, but skin scarifications before treatment had not revealed *Onchocerca volvulus* microfilariae. No other patient reported any side effect.

### Discussion

This study evaluated the effect of a single high dose of ivermectin on *M. perstans* parasitaemia. The regime was well tolerated and no significant side-effect was detected. Unfortunately there was no beneficial effect on microfilaraemia after a median follow-up period of 35 d, although a late effect on microfilarial counts cannot be excluded. We conclude that a single high dose of ivermectin is not useful for treatment of *M. perstans* filariasis.

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