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Treatment of strongyloidiasis with mebendazole

Short communication

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The female *Strongyloides stercoralis* worm deposits its eggs in the intestinal lumen. Rhabditoid larvae hatch from the embryonated eggs and are passed with the faeces. The free-living larvae may subsequently undergo either asexual or sexual development. Asexual larval development may take place entirely in the intestine, so that the infective filariform larval stage is reached before the larvae leave the body. In this case the filariform larvae migrate from the anus and penetrate the skin of the anal region (external autoinfection). In rare instances, they enter the tissue of the lower rectum without leaving the body (internal autoinfection).

This explains why *Strongyloides* infections may persist for years. Under immunosuppressive treatment or in the course of diseases characterized or accompanied by depressed cell-mediated immunity hyperinfection may take place, sometimes ending in death. Thiabendazole is commonly used in the treatment of *Strongyloides*. Cure rates of up to 85% have been reported (Gill and Bell, 1979). The efficiency of thiabendazole is based on the fact that the compound is absorbed and acts not only against the intestinal parasites but also against the tissue stages of the nematode. Unfortunately side effects such as anorexia, nausea, vomiting, dizziness and headache are frequently observed and may force termination of the treatment.

Mebendazole is a more recently developed antihelmintic drug which is equally effective against nematodes and well tolerated. The compound is poorly absorbed and therefore the nematodes dwelling in the intestine are killed, but not the larvae migrating in the tissue. Treatment of strongyloidiasis with mebendazole yields cure rates of up to 70% (Musgrave et al., 1979). The poor tolerance of the "efficient" drug thiabendazole limits its use in patients with concomitant diseases of the nervous system, the liver, the kidney and allergic disorders whereas the "less efficient" drug mebendazole may be safely given. Complete cure of strongyloidiasis in these patients may be achieved when

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mebendazole is administered in a rather low dose over the whole period of the parasite development in the tissue.

As some 17 days elapse between the time the larvae enter the skin or mucosa and the moment they emerge in the stools as eggs or larvae we decided to use the following treatment scheme: 1 g of mebendazole was given on the first day and 500 mg on the consecutive 20 days, resulting in a total dose of 11.0 g. Serious side effects were not to be expected since mebendazole had been used in patients with echinococcosis in a daily dosage of up to 3 g for several months and was well tolerated (Ammann et al., 1979).

We selected 2 patients in whom the use of thiabendazole was contraindicated.

Patient I was a 34-year-old man suffering from syringomyelia. He was referred to us because of eosinophilia (19%). The stool examination (Merthiolate-iodine-formaldehyde-concentration-method, Blagg et al., 1955) showed numerous strongyloides eggs and larvae. Treatment with mebendazole in the dosage recommended for short term treatment, 3 times 200 mg daily for 3 days, was started. Three more courses of mebendazole were given because strongyloides larvae reappeared each time after several weeks. We then decided on the prolonged treatment with mebendazole as referred above. No side effects attributable to the drug were reported. Control examinations performed after 1, 2, 4, and 14 months, respectively, were negative. The eosinophil count fell to 7%.

Patient II was a 45-year-old man with chronic pancreatitis. The stool analysis showed strongyloides larvae. The patient was treated three times unsuccessfully with 200 mg mebendazole 3 times daily for 3 days. Subsequently, the patient received 1 g mebendazole followed by 0.5 g daily for 20 days. Follow-up examinations after 1, 2, and 3 months, respectively, were negative. During the treatment no side effects had occurred.

The treatment of strongyloidiasis is frequently complicated by the poor tolerance of thiabendazole, the drug of choice in this parasitic disease. In some cases the application is impossible because of additional diseases. And finally, in a number of patients strongyloidiasis is not cured by this antihelmintic drug.

In these circumstances thiabendazole may be substituted by mebendazole. If given over a period of 3 weeks in a dosage of 0.5 g per day mebendazole will kill the parasites before leaving the intestinal tract either by bowel movement or by penetrating the intestinal wall or upon reentering the lumen after completing the development in the body tissue. From our observations we conclude that mebendazole is effective and well tolerated.

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