Archives of Disease in Childhood, 1970, **45**, 196.

Treatment of Children with Acute Amoebic Dysentery

Comparative Trial of Metronidazole against a Combination of Dehydroemetine, Tetracycline, and Diloxanide Furoate

C. J. RUBIDGE, J. N. SCRAGG, and S. J. POWELL

From the Departments of Paediatrics and Child Health, and of Medicine, University of Natal; and the Amoebiasis Research Unit, Durban, South Africa*

Rubidge, C. J., Scragg, J. N., and Powell, S. J. (1970). *Archives of Disease in Childhood*, **45**, 196. **Treatment of children with acute amoebic dysentery: comparative trial of metronidazole against a combination of dehydroemetine, tetracycline, and diloxanide furoate.** Metronidazole cured 17 out of 20 children with acute amoebic dysentery. The 3 failures were later treated with dehydroemetine, tetracycline, and diloxanide furoate, but 2 required further courses of amoebicides before they were cured. A combination of dehydroemetine, tetracycline, and diloxanide furoate produced cure in 16 out of 19 children. The 3 failures were subsequently treated with metronidazole. 2 were cured; the remaining patient did not reattend for follow-up.

Metronidazole is as effective as the previously favoured combined regimen of amoebicides in children with amoebic dysentry. It is a safe and simple form of treatment.

Though in milder infections other forms of therapy may suffice, a combination of either emetine hydrochloride or dehydroemetine with tetracycline and a 'luminal' amoebicide has for several years in Durban been regarded as the treatment of choice for the more severe cases of amoebic dysentery in adults (Wilmot, 1966; Powell, 1967, 1969a). Such combined therapy is adequate since it is amoebicidal at all the sites at which *Entamoeba histolytica* can be assumed to be present, i.e. in the bowel lumen, in the bowel wall, and in the liver (Wilmot, 1962; Powell, 1969b).

In African children who are frequently malnourished and suffering from additional diseases, amoebic dysentery is a serious condition. It tends to be acute in onset and, should complications occur, the prognosis is worse than in adults (Wilmot, 1962). For this reason it has been our practice to give the combined regimen to all children admitted to this hospital with amoebic dysentery.

Received 18 August 1969.

*The Amoebiasis Research Unit is sponsored by the following bodies: the South African Council for Scientific and Industrial Research; the Natal Provincial Administration; the University of Natal; and the United States Public Health Service (Grant AI 01592).

In recent years metronidazole has been shown to be outstandingly effective in the treatment of adults with invasive amoebiasis, and, since it combines both intestinal and systemic activity, it has become the single drug of choice in this disease (Powell, Wilmot, and Elsdon-Dew, 1967). The present trial was designed to find out if metronidazole was as effective in children with amoebic dysentery as in adults and to compare its efficacy with that of the combined regimen which in the past has been our favoured form of treatment.

Materials and Methods

Thirty-nine African children, their ages ranging from 7 months to 10 years, were treated in hospital. All had diarrhoea with blood and mucus of acute onset, and actively motile haematophagous *E. histolytica* were present in their stools. All were kept in hospital for a minimum of 28 days after starting treatment, and repeated stools were examined by direct saline smears and zinc sulphate flotation after completing therapy. Attempts were made to obtain follow-up specimens in all children after discharge from hospital and, though incomplete, in the majority further stool specimens were obtained up to 90 days later.

The children were randomly allocated to one of the following two treatment schedules.

(i) 20 received only metronidazole in the daily dosage of 50 mg./kg. orally for 7 days.

(ii) 19 were given a combination of dehydroemetine, 2 mg./kg. daily by subcutaneous injection for 10 days, with tetracycline, 50 mg./kg. daily orally for 7 days, and diloxanide furoate, 25 mg./kg. daily orally for 10 days.

Results

Of the 20 who received metronidazole 17 were cured. They remained symptom free and *E. histolytica* was not found in subsequent stool specimens. In 3 children symptoms recurred, and *E. histolytica* was observed on the 11th, 12th, and 22nd days after the start of treatment. These 3 who failed to respond to metronidazole were then given dehydroemetine tetracycline, and diloxanide furoate, but 2 failed to respond to this regimen and were finally cured only by further combinations of amoebicides.

Of the 19 who were given the combination of dehydroemetine, tetracycline, and diloxanide furoate, 16 were cured. In the remaining 3 children symptoms recurred and *E. histolytica* reappeared in their stools on the 3rd, 20th, and 55th days. One of these patients was lost to follow-up but the remaining 2 were cured by a course of metronidazole.

Tolerance of both regimens was excellent and no toxicity was encountered.

Discussion

Our results establish that for the treatment of amoebic dysentery in children metronidazole alone is as efficient as our most effective combined regimen of other amoebicides, and produces results comparable to those reported in adults. Either form of treatment may fail to eradicate *E. histolytica* in a small number of patients, and to ensure cure follow-up examinations are essential.

Metronidazole is a safe oral preparation devoid of serious toxicity, and has the advantage of being a single drug which provides convenient, short, and effective therapy. Hence it is the drug of choice for the treatment of most cases. However, where oral therapy is not possible, as in cases with peritonitis, emetine preparations and intravenous tetracycline remain essential.

We are indebted to the registrars of the Department of Paediatrics and Child Health, University of Natal, who assisted in this study, to Dr. H. Wannenburg, Medical Superintendent, King Edward VIII Hospital, Durban, for facilities; and to Messrs. May and Baker Ltd., for supplies of metronidazole.

References

Powell, S. J. (1967). Short-term follow-up studies in amoebic dysentery. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, **61**, 765.

—— (1969a). Current therapy of amoebiasis. *Indian Practitioner*, **22**, 19.

—— (1969b). Metronidazole in the treatment of amoebic dysentery. *Medicine Today*, **3** (1), 48.

——, Wilmot, A. J., and Elsdon-Dew, R. (1967). Further trials of metronidazole in amoebic dysentery and amoebic liver abscess. *Annals of Tropical Medicine and Parasitology*, **61**, 511.

Wilmot, A. J. (1962). *Amoebiasis in childhood.* In *Clinical Amoebiasis.* p. 125. Blackwell, Oxford.

—— (1966). Amebiasis. Method of A. J. Wilmot. In *Current Therapy*, 1966, p. 3. Ed. by H. F. Conn. Saunders, Philadelphia and London.

Correspondence to Dr. S. J. Powell, P.O. Box 1035, Durban, South Africa.