

## ORIGINAL ARTICLE

## Minute Treatment with Tinidazole and Ornidazole in Children with Amebic Dysentery

by

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## Abstract

At the Department of Child Health, sub-division of Gastroenterology, Pirngadi Hospital, Medan, 41 children were given a single dose treatment with either Tinidazole or Ornidazole. Both drugs were used in a single dose of 50 mg/kg BW. Patients were randomly assigned to the Tinidazole regimen (19 children) or to the Ornidazole regimen (22 children).

A double blind method was used in the treatment. In both groups, clinical and parasitological cure assessed on day 4 were excellent.

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## Introduction

Treatment of amebic dysentery with a single dose has been referred to as "minute treatment". In 1972, Jo et al. used Metronidazole in a single dose of 50 mg/kg BW. With this single dose treatment Jo et al. (1972) found a comparable cure rate obtained with a 3 days' treatment.

At present Metronidazole, Tinidazole or Ornidazole are known to be "drugs of choice" in Amebic dysentery (Achmad et al, 1976; Ajang Sumarni et al, 1977; Jo et al. 1972). Panggabean et al. (1978) in a double blind study, found that Tinidazole and Ornidazole in a dose of 50 mg/kg BW for 3 days gave very satisfactory results.

The objective of this study was to determine whether :

1. Tinidazole or Ornidazole in a single dose gives satisfactory results in the treatment of amebic dysentery,
2. there is any difference between Tinidazole and Ornidazole treatment in amebic dysentery.

## Material and Methods

Between August 1978 and May 1979, fecal examination was done on every child who came to the Pediatric Gastroenterology Subdivision with the symptoms of bloody diarrhea. Only those patients who showed motile trophozoites of Entamoeba histolytica containing red blood cells in their feces were included in this study.

Fecal examination was done on the first, second, third and fourth day of visit and one week thereafter.

Fifty patients were thus obtained, their ages ranged between 8 months and 13 years, mostly between 3 and 6 years (table 1).

Fecal specimen was obtained from the rectum. Examination was done with direct smear only, stained with eosin 1%.

The allocation to the Tinidazole and Ornidazole group was done by random numbers. Of the 50 children, 26 were treated with Tinidazole and 24 with Ornidazole. Single dose of 50 mg/kg BW/day was employed.

All were outpatients and treatment was given directly at the hospital.

A double blind method was used. The patients were asked to return on the second, third, fourth day and one week later for macroscopic and microscopic fecal examination.

Parasitological remission was achieved when the feces no longer contained any form of Entamoeba histolytica on subsequent follow up visits.

Clinical remission was achieved when diarrhea stopped and the feces no longer contained mucus or red blood cells.

Patients also suffering from trichuriasis, were treated with mebendazole after the dysentery had been cured.

Of the twenty six children from the Tinidazole group 24 returned on the second day, 19 returned on the third day, 13 returned on the fourth day and 8 returned one week later.

Out of 24 patients given Ornidazole, 24 returned on the second day, 22 returned on the third day, 17 returned on the fourth day and 10 returned one week later.

Patients were included in the final evaluation if they returned for at least 2 follow up visits.

### Results

1. Out of 50 children included in this study, only 41 returned for at least 2 follow up visits (19 in the Tinidazole group and 22 in the Ornidazole group).

Parasitological remission assessed on day 4 was 100% in both the Tinidazole and Ornidazole group.

2. Evaluation on the second day :

— Tinidazole group : out of 19 patients examined, parasitological remission was 58% (14 patients) and clinical remission was 72% (13 patients) (table 2 and 3).

— Ornidazole group : out of 22 patients examined, parasitological remission was 82% and clinical remission was 82% (table 2 and 3).

The difference between the parasitological remission of the Tinidazole and Ornidazole group was significant ( $p < 0.01$ ).

The difference between the clinical remission of the Tinidazole and Ornidazole group was significant ( $p < 0.01$ ).

3. Evaluation on the third day :

— Tinidazole group : 19 patients were examined and parasitological remis-

sion was 100% whereas clinical remission was 94.73%.

— Ornidazole group : 22 patients were examined and parasitological remission was 95.45% whereas clinical remission was 100% (table 2 and 3).

4. Evaluation on the fourth day :

— Tinidazole group : 13 patients returned for follow up and both the parasitological and clinical remission were 100%.

— Ornidazole group : 17 patients returned for follow up and both the parasitological and clinical remission were 100% (table 2 and 3).

5. Evaluation one week later :

— Tinidazole group : 8 patients were examined and both the parasitological and clinical remission were 100%.

— Ornidazole group : 10 patients were examined and both the parasitological and clinical remission were 100%.

6. Out of 41 children included in this study, 27 children also suffered from trichuriasis, 12 in the Tinidazole group and 15 in the Ornidazole group.

### Discussion

Treatment of amebic dysentery for 3 days with a dose of 50 mg/kg BW was good (Jo et al, 1972; Lubis et al, 1977; Panggabean et al, 1978).

The results of this study were that a single dose of both Tinidazole or Ornidazole also gave excellent results. In developing countries, the drugs can therefore

be ideally used to eradicate amebic dysentery, because of its low cost.

### Conclusion

Both Tinidazole and Ornidazole in a single dose, achieved 100% clinical and parasitological remission.

### Acknowledgement

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TABLE 1 : *The distribution of patients according to age and sex*

Age years	Tinidazole		Ornidazole		Total
	male	female	male	female	
0 - 1	—	—	—	—	—
1 - 3	3	1	3	1	8
3 - 6	10	3	4	6	23
> 6	1	1	6	2	10
	14	5	13	9	41

TABLE 2 : *Parasitological remission*

Follow up	Tinidazole		Ornidazole	
	total	percentage	total	percentage
2nd day	11	58.00+	18	82.00+
3rd day	19	100.00++	21	95.45++
4th day	13	100.00	17	100.00
1 week later	8	100.00	10	100.00

+ p &lt; 0.01

++ p &gt; 0.01

TABLE 3 : *Clinical remission*

Follow up	Tinidazole		Ornidazole	
	total	percentage	total	percentage
2nd day	13	72.00+	18	82.00+
3rd day	18	94.73	22	100.00
4th day	19	100.00	17	100.00
1 week later	8	100.00	10	100.00

+ p &lt; 0.01