

## Action of *Mentha crisper* hydroethanolic extract in patients bearing intestinal protozoan

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**SUMMARY.** The amoebicide and giardicide activity of the hydroethanolic extract of the *M. crisper* leaves was tested in 122 patients of which 93 were bearers of *Entamoeba histolytica* and 29 of *Giardia lamblia*. The positive results were 91% in the *E. histolytica* cases and 68% in the *G. lamblia* cases, as evidenced by both the cystic and vegetative forms in the faeces of the patients.

*Mentha crisper* L. (Labiatae) is popularly known as "hortelã-da-folha-miuda". The leaves are used in Brazilian popular medicine as antiparasitic, stomachic, and carminative. Borba and Kobayashi studied the activity of fractions of the *M. crisper* on cultures of *Entamoeba histolytica* (SAW 1627 Strain) obtaining significant results.<sup>1</sup> In the hexanic and ethanolic extract of *M. crisper* ursolic acid, flavonoids and a glucoside of sitosterol were identified.<sup>2</sup> In this work the amoebicide and giardicide activity of the ethanolic extract of the leaves of *M. crisper* in patients<sup>3</sup> were studied.

### EXPERIMENTAL

**Preparation of the extract.** The extract was prepared from plants picked right on the campus of the University with voucher specimen deposited at the Herbarium. Finely ground dry leaves were treated with 20% ethanol for ten days. After filtration, the final concentration of the extract was 28 mg/ml. The extract was stored in 30 ml dropper vials.

**Treatment protocol.** 122 patients were studied: 23 children and 99 adults. All were submitted to coproscopic examination by the Hoffman method with the following results: 93 were bearers of *Entamoeba histolytica* and 29 bearers of *Giardia lamblia*.<sup>4</sup> In all cases a global and specific count was taken besides the following biochemical exams of blood: glucose,<sup>5</sup> urea,<sup>6</sup> creatinine<sup>7</sup> and transaminases (GPT, GOT).<sup>8</sup> 50 drops (2 ml) of the extract, diluted in 100 ml of water, were administered orally three times a day before the main meals for a period of 5 days. For children under ten years, half dosage was used.

### RESULTS

The patients submitted to the treatment with *M. crisper* leaf hydroethanolic extract presented accentuated improvement in the abdominal pains, meteorism, and diarrhea. The coproscopic tests done on days 5, 10, and 15 after the treatment showed an effective action in 91% of the bearers of *E. histolytica* and 68% of the bearers of *G. lamblia*, both in cystic and vegetative form (Table 1). The treatment did not evidence either hematological or biochemical abnormalities or secondary effects in any of the patients. The hydroethanolic extract was well tolerated by all the patients (Table 2 and 3). The extract was stored at a room temperature of 28 °C for 12 months. After this period a loss of activity in the order of 70% was observed. The cause has not been investigated in this study.

	Number of patients	Negative results	Positive results	Percent of negative results
<i>Entamoeba histolytica</i>	93	85	8	91
<i>Giardia lamblia</i>	29	18	11	68

Table 1 - Results of the coproscopic exams after treatment with the extract of *M. crispata* for 5 days.

	Before	After
Red blood cells	4,400,000 ± 240,000	4,390,000 ± 242,000
White blood cells	6,700 ± 728	6,750 ± 730
Platelets	322,000 ± 70,000	320,000 ± 68,000

Table 2 - Red, white, and platelets count in the patients treated with *M. crispata* extract for 5 days.

Dosage	Before	After
Glucose mg%	87.5 ± 10	87.2 ± 9.8
Urea mg%	29.7 ± 3.4	29.3 ± 3.6
Creatinine mg%	1.26 ± 0.22	1.3 ± 0.26
GPT UI/l	12.2 ± 3.3	12.5 ± 3.2
GOT UI/l	10.0 ± 3.5	11.0 ± 3.6

Table 3 - Biochemical dosages in the blood of the patients treated with *M. crispata* extract for 5 days.

## CONCLUSION

The hydroethanolic extract of *M. crispata* showed amoebicide and giardicide activity in 91% and 68% of cases studied endorsing its utilization in the popular Brazilian medicine as well as the *in vitro* results obtained by Borba.<sup>1</sup>

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