

## SURVEY OF PRAZIQUANTEL'S EFFECT ON FASCIOLIASIS

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### ABSTRACT

Even though in some reputable references, praziquantel is still a drug of choice for treatment of fascioliasis, but our study on 100 patients shows that it has no effect on the parasite.

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### INTRODUCTION

For many years, praziquantel has been used as a drug for treatment of trematode infections.<sup>1-4</sup> However the effects of the drug on the parasite have been doubted by others.<sup>5-7</sup>

With respect to the above-mentioned argument, we conducted a research study on effects of praziquantel and other drugs such as bithional and emetine on the parasite. In the following paper we survey the effects of praziquantel.

### MATERIAL AND METHODS

First, we chose 100 patients who had fascioliasis, and the parasite's egg was seen frequently in their stools. Also their Elisa test was positive.

We gave them praziquantel 3 times a day, (25 mg/kg), for one day, then controlled the changes in their clinical symptoms as well as measurement of reappearance (side effects of the drug and appearance of the egg in the excrement, which is the only indicator of the continuity of the parasite's life in the patients).

The chosen method for testing the stool is KATO, and its preference over other methods is being approved.<sup>8</sup>

### RESULTS

More than 90% of the above-mentioned patients have tolerated the drug easily and had no complaint of

Table I. Response of the patients to praziquantel.

|  |     |
|--|-----|
| Patients without clinical recovery   | 30% |
| Patients with clinical recovery without reappearance.                          | 60% |
| Patients with complete clinical recovery without reappearance.                 | 10% |
| Existence of parasite eggs in the excrement two to four weeks after treatment. | 98% |

any illness related to the drug. Only 10% of the patients had minor digestive signs like abdominal discomfort and nausea.

The parasite's egg was observed in 98% of the patients two to four weeks after treatment (Table I).

### DISCUSSION

Praziquantel is one of the derivatives of isoquinolic-pyrazine which has low solubility in water (Fig 1). Its absorbency in the body is rapid (about 80%) and one to two hours after taking the drug, its density in serum is at most 1ug/mL.

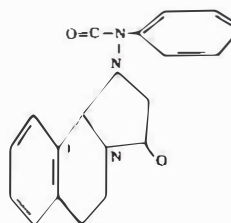


Fig. 1. Chemical formulation of praziquantel.

## Praziquantel's Effect on Fascioliasis

The drug passes the blood-brain barrier and will have a density equal to 20% to 40% of the amount of spinal fluid (in the dog).

The density of the drug in bile is three times more than its density in venous blood.

The *in vitro* effects of this drug on all platy helminths seems to be the same. The ability of penetration on all cell membranes is increased by the drug, which causes severe contraction, muscular paralysis, vacuolization, destruction of the tegmen and death of the worm.

Even though *F. hepatica* absorbs this drug, no reaction occurs. The results obtained from recent studies have proven that this drug has no *in vivo* effect on fascioliasis. Only in two cases of 100 cases under study the parasite eggs vanished. In the mentioned two cases, the continuation of the worms' life without production of eggs or spontaneous death of the parasite without effects of praziquantel must be considered.

To consider the effects of other drugs like bithional and emetine and also to consider the 6th and 8th week after treatment with praziquantel, we are continuing these studies.

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