

THE VARIATION BETWEEN PRAZIQUANTEL AND ALBENDAZOLE IN THE MEDICAL TREATMENT OF HYDATED DISEASE

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ABSTRACT

This study reflects the differences between the Praziquantel and Albendazole effectiveness in the medical treatment of hydrated disease. And it shows that the combination of both drugs (Albendazole 10mg/kg b.i.d. for 28 days 3 courses separated by 2 weeks intervals, and Praziquantel 40mg/kg once weekly as adjunct to Albendazole), was more effective(57.14%), than Praziquantel(47.37%) alone in a dose of 40mg/kg for 28 day, 3 courses separated 2 weeks intervals. While the Albendazole alone was (41.93%) effective in the treatment of hydatidosis.

Key words ;, Praziquantel , Albendazole, Hydated cyst

INTRODUCTION:

Albendazole is the treatment of choice for medical therapy and is a useful adjunct to surgical removal or aspiration of cysts; it is more active against *E. granulosus* than *E. multilocularis*(1). In hydrated disease praziquantel kills protoscolecocytes but does not affect the germinal membrane. Praziquantel is being evaluated as an adjunct with albendazole pre and postsurgery. In addition to action, praziquantel enhances the plasma concentration of Albendazole sulfoxide(2). Praziquantel primarily an antitrematode agent, then rapidly is becoming drug of choice for treating tapeworm infections, although its use as a such still considered experimental by the FDA(3). Target organisms of praziquantel (Bitricide) is very active against nematode (flukes) and cestodes (tapeworms). This agent is a drug of choice for tapeworms, schistosomiasis, echinococcosis granulosus and other fluke infestations(4). Treatment with Albendazole for several months is of benefit in many cases, by a dose of 400mg b.i.d. x 1-6 months for adult patients; and 5mg/kg/day ;and at (maximum 800mg x 1-6 months for pediatric patients(5). The medical

therapy indications may be in preoperative adjunctive therapy, poor surgical risk, disseminated disease, ruptured cysts and operative spillage(6). The scolicidal are: Hypertonic Saline 3%-20%, Betadine 10%, Alcohol 95%-98%, Silver Nitrate 0.5%, Mebendazole, Formaline 2.5%, Cetrime 4%(9).

The efficacy, safety and compliance of albendazole have proven over 20 years of clinical experience, involving millions of patients(10). While praziquantel have some side effects involving allergic reactions (swelling of the lips, tongue, or face; shortness of breath; closing of throat, or hives). Other, less serious side effects may be more likely to occur(10).

Although praziquantel is antihelmintic, or anti-worm, medication. It prevents worms from growing or multiplying in the body; It is also used for purposes other than those listed in many its medication guide(11).

PATIENTS & METHODS

All the patients with hydrated diseases in the liver and lungs were investigated and managed in All-Hussein Teaching Hospital in Thi-Qar and also, in Primary Care Department of General Thi-Qar Directorate. The majority of those patients had a history multiple hydrated cysts, or they were unable for

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surgery, as confirmed by their history, clinical examinations, as well as ultrasonic examinations which reflect multiple or few with very huge cyst(s) mainly in the liver. Chest x- Ray done for those patients with hydated diseases in lungs according to their chief complaints, other investigations involved spiral CT-scan and \ or MRI if available with some patients. The total number of 76 patients had been investigated and managed; 29 were males and 47 patients were females, with age ranged between 25-50 years old as shown in (Table 1).

Doses and duration of treatment:

38 patients were treated either by praziquantel in a dose of 40mg/kg for 28 days , 3 courses separated 2 weeks intervals (Distocide , Shin Poong Company Ltd Korea). Other 31 patient were treated by Albendazole 10mg/kg bid. for 28 days 3 courses separated by 2 weeks intervals (6.). However, 7 of the other patients were treated by both Albendazole in a dose 10mg/kg bid. for 28 days with 3 courses separated by 2 weeks intervals; and praziquantel 40mg/kg once weekly as an adjunct to Albendazole(6). A follow-up form was used containing history details and clinical examinations for them. Ultrasonic examinations, chest X ray, and other routine tests were also done involving: complete blood picture and E.S.R. The every new results of these investigations as well as the old previous results were compared during each visit. And according to these results; the terms good improvements or good response were used.

RESULTS

In this paper the number of the patients which were treated by praziquantel only by the doses previously reported were 18 patient (47.37%) out of 38 patient, were completely respond to the treatment and had good improvement, as they compared with 31 patient who were treated by albendazole only 13(41.93%) had good improvement. While those

patients (No.7) which were treated by both Albendazole and praziquantel by the doses and durations of courses which were also previously reported(5,6); were only 4(57.14%) had good respond for both drugs as shown in (Table-2). The distribution of hydatidosis in this study was more in liver (59.57%) of female than male patients (36.17%). And the distribution of the hydrated disease in the lungs was also more in female patients (40.42%) than males (25.53%) as shown in (Table -1).

DISCUSSION

Chemotherapy for hydrated disease has been indicated especially for inoperable cases, and postoperatively to decrease the chance for recurrence (6).So in the present study, it was found that praziquantel 18(47.37%) was more effective than Albendazole 13(41.93%), while (57.14%) of the patients respond well to both praziquantel and Albendazole as a combination therapy for treatment of hydrated cysts, that in chemotherapy of hydatidosis; depend on factors related to parasite, the host and the chemotherapeutic agent and its pharmacokinetics (7). It was found that both agents (praziquantel with Albendazole),had also good percentages of response; that in some studies reflect the two binzimidazole compounds; mebendazole and Albendazole have been clinically for use over than 20 year or more in the chemotherapy of hydatidosis(7&8).

Praziquantel was also evaluated and use as a scolicidal agent in-vitro culture systems, and as a post-operative treatment in abdominal hydated disease. Some worker have reported encouraging results disappearance of hydated lesion. Other reported, however have less favorable outcome and even treatment failure(5). In other studies the hydated cyst should be excised wherever possible, Albendazole (400mg 12-hourly for 3 month) is used for inoperable disease, and to reduce the infectivity of the cysts preoperatively.

Praziquantel 20mg/kg 12-hourly for 14 days like protoscolices peri-operatively (6). It was also found that the distribution of the hydated disease in this study was more in female than male patients. And the hydatidosis sites was

more in the liver in comparison to the lungs. We concluded from this study : that the combination of both praziquantel together with Albendazole is more effective the correct dose and duration.

TABLES:

Table (1) The states (results) of the treatment with Praziquantel, Albendazole or both drugs for hydated cysts.

State of response	Praziquantel	Albendazole	Both drug
Patients with good response	18(47.37%)	13(41.93%)	4(57.14%)
Patients without response	20(52.63%)	18(58.07%)	3(42.86%)
Total	38	31	7

Table(2) Distribution the sites of the hydated cysts according to the sex variation

Site of the cysts	Males	Females
In the lungs	17(36.17%)	28(59.57%)
In the liver	12(25.53%)	19(40.42%)
The total	29	47

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مقارنة بين عقاري Albendazole و Praziquantel في علاج مرض الأكياس المائية

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الخلاصة:

هذه الدراسة تعكس لنا الاختلاف والكفاءة الدوائية لكل من عقاري (Praziquantel) و (Albendazole) في علاج مرض الأكياس المائية والتي تبين فعالية هذين العقارين فيما اذا استعملتا سوياً هي (57.14%) "فعالية اكثر" إذا أعطي عقار (Albendazole) بجرعة (10mg\ kg) مرتين في اليوم لمدة 28 يوم لثلاث كورسات (فصول) علاجية وخلال فترة تفصل اسبوعين لكل كورس (فصل) علاجي. مع عقار (Praziquantel) (40mg\ kg) مرة أسبوعياً كعلاج ملحق مع العلاج الاول.

بينما تبين الدراسة بان استعمال عقار (Praziquantel) له تاثير علاجي بنسبة (47.37%) فيما اذا أعطي بجرعة (40mg\kg) لمدة 28 يوم وخلال فترة أسبوعين لكل كورس (فصل) علاجي منه. أما استعمال عقار (Albendazole) لوحده فان نسبة تأثيره (فعاليتته) العلاجية هي (41.93%) في علاج مرض الأكياس المائية.

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