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ANITHROMBOTIC ACTIVITY OF ASCARIASIS INFECTION IN MICE

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ABSTRACT

The eggs of femaies of *Ascaris Lumbricoides* which collected from the patients after given the bendazol (200mg) and then performed artificially hatching and maturation of these eggs to obtain the third larvae stage. The results appeared Prothrombin and thrombin clotting time when added the extract of the third larvae stage was prolonged when compare to the control.

This study is the first time because dose not any information regarding the antithrombotic activity of the larvae

INTRODUCTION

Certain species of helminths such as *Ascaris Lumbricoides*, *Trichinella spiralis*, and hook worms spend part of their life cycle in the blood circulation system whereas others such as filariae and schistosomas may live for many years in the blood stream, the mechanisms by which worms aviod stimulating the coagulation is uncertain (1).

Ascaris Lumbricoides a nematode parasite of man spends parts of its life-cycle in the blood circulation system of the infected host. The hatched larvae actively migrate through the intestine wall and pass into the portal circulation to the liver, right heart and through the pulmonary vessels to the intra alveolar tissue of lungs (2).

Although the adult of *Ascris suum* have been shown to possess antithrombotic activity (3-4), the studies does not reveal any information regarding the antithrombotic of larvae.

MATERIALS AND METHODS

a-Parasite preparation: Stool samples were collected from patients infected with ascariasis and the eggs were concentrated by saturated salt flotation technique, according to the modified method of (5), the eggs put in normal saline for two days and centrifugation for (10) min. to obtained the embryonation eggs (second stage). The third stage larvae were obtained from the lungs of rabbits during seven days after oral infection with second stage (infective stage). The larvae were washed in (0.15M) phosphate buffer saline (PBS), (pH=7.2) distributed by sonication and extracted for (18hrs) at ($4C^{o}$). The insoluble materials were removed by centrifugation at (8800 rpm) for (30min) and supernatant fluid stored at (- $20C^{o}$) (6).

b-Plasma: Platelet - poor plasma was prepared from the mice which had no known defects of platelet function (7).

c-Coagulation studies: (PT) and (TT) were measured base on (8), (0.1ml) of whole extract of third stage was added to (0.1ml) of plasma in a separate sets. The above mixture was incubated at ($37C^{o}$) in water discarded. For assay of (PT), (0.1ml) of brain extract thromboplastin (Biomerieux Co.) was added to each tube keeping (2min) in intervals between the tubes. After (1min) incubation (0.1ml) of calcium chloride (M=40) (biomerieux comp.) was added and the formation of fibrin clot was observed. The time from this addition to the clot formation was measured.

For (TT) assay, (0.1ml) of kaolin was added and the formation of clot observed.

RESULTS

The Prothrombin Time (PT) was significantly prolonged in test tube samples compared to controls ($P < 0.001$) table (1).

Thrompoplastin Time (TT), there was a significant difference in the prolongation of (TT) as compared to controls ($P < 0.001$) table (II).

Table (I): Effect of third stage larvae on Prothrombin Time (PT).

Sample No.	Normal	Time in seconds	
		PBS	L_3
1	17	18	25
2	17	20	32
3	14	20	31
4	14	20	32

Table (II): Effect of third stage larvae on Thrombin Time (TT).

Sample No.	Normal	Time in seconds	
		PBS	L_3
1	14	18	32
2	14	19	31
3	13	20	29
4	13	21	30

DISCUSSION

Any consideration of the life cycle of blood dwelling helminths must take account of the immunological and heamostatic systems of the host, the present study has indicated that larval stages of *Ascaris lumbricoides* possess antithrombotic activity which may be involved in evasion of the host defense system.

The significant difference in prolongation time (PT) by the extracts as compared to control is in contrast with the reported observation on *Schistosoma mansoni* (10) and adult worm of *A. summ* (11). The (12) have reported significantly prolonged (PT) in mice at (6) weeks to the (16) weeks after infection with 125 *S. mansoni* cercaria. These workers have not considered this observation in relation to haemostasis but rather as one of the methods of measurement for liver dysfunction of hepatosplenic in mice. The present study indicated that the larva of *A. lumbricoides* produced an inhibitor for the extrinsic blood coagulation. Pathway as well as which is not produced by the adult worms, also there is possibility that the concentration of an inhibitor is related to the association of the parasite with the host this agreed with (13).

النشاط المضاد للتخثر للاصابة بداء الاسكاريس في الانسان

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الخلاصة

جمعت بيوض اناث ديدان طفيلي اسكارس الانسان *Ascaris lumbricoides* من الاشخاص المصابين بعد اعطائهم عقار البندازول (٢٠٠ ملغم) ثم اجريت عملية النضج والتفقيس الاصطناعي لهذه البيوض للحصول على يرقات الطور الثالث. أظهرت نتائج هذا البحث بأن زمن تخثر البروثرومبين والثرومبوبلاستين باضافة خلاصة يرقات الطور الثالث كان أطول مقارنة مع مجموعة السيطرة.

وقد اجريت هذه الدراسة وذلك لعدم توفر أية معلومات تتعلق بنشاط اليرقات المضاد للتخثر.

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