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THE EFFICACY OF FENBENDAZOLE AGAINST LUNG WORM IN NATURALLY INFECTED SHEEP

(With Two Tables)

By

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كفاءة عقار الفينبندازول في علاج الديدان الرئوية في الأغنام

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ظهرت بعد الأعراض التنفسية في قطيع من الأغنام بمزرعة خاصة بمنطقة جنوب التحرير بفحص تلك العينات من البراز وكذلك الرئة للحيوانات المتوفاه حديثا تبين أنها مصابة بديدان الديكتوكولس فيلاريا وكانت نسبة الإصابة ٢٢٫١٢٪ . وقد تم تقسيم الحيوانات المصابة إلى مجموعتين من الحيوانات ومجموعة ثالثه ضابطة غير مصابة . تم علاج المجموعة الأولى المصابة بعقار السفيندازول بتركيز ٢٥٪ وتبين كفاءة العقار بنسبة ١٠٠٪ في العلاج وإختفاء الأعراض من الحيوانات . وتم أيضا عمل دراسات على سهرم الحيوانات المصابة قبل وبعد العلاج وتبين أن هناك تغير معنوي في نسب الكالسيوم والفسفور والمغنسيوم .

SUMMARY

Examination of 208 sheep revealed 46 were suffering from affection with lung worm D.filaria serum samples were collected from infected animals for determination of calcium, in organic phosphorus, iron sodium, potassium and magnesium. Panacur used for treatment and eliminated 100 percent of adult worms and all symptoms disappeared.

INTRODUCTION

Lung worm infestation in sheep and goat is belived to be a serious problem all over the world and Egypt. (REPORT, 1974) and MOHAMED, et al. (1988) proved that the high percentage and high mortality rates in animals is due to that parasites infestation.

Although verminous pneumonia in sheep depress the growth and terminates by death of infested lamb (SKERMAN, et al. 1968), yet it received a little attention as a serious sheep disease in Egypt. Where the prevalence of the disease in Egypt has been reported by SOLIMAN and FARID (1960); EZZAT and TODROS (1962) and EL REFAI, et al. (1966).

Therefore this study presents the result of infection percent among sheep suffering from Dictyocaulus Filaria at some private farm at El-Tahrir; its controlled by using Fenbendazole: pancur, Produced by Hoechst AG, Frankfurt, W. Germany, Fenbendazole, powder at a dose of 60 mg/kg B.W., and some biochemical studies of serum before and after treatment.

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MATERIAL and METHODS

208 random fresh samples of rectal contents were collected from sheep suffering from respiratory symptoms with high mortality rate during three months from December 1986 to February 1987. Post mortem examination of lungs of three sacrificed and five recently dead sheep proved to be infected with lung worms. Lung worm larvae from faeces were separated by Baermann wetzel technique. The first stage larvae collected from the faecal pellets were identified according to SOULSBY (1968). Twenty sheep were used, fifteen of them were infected with D.filaria and divided into 2 groups Group (A) including 10 animals and treated with 60 mg/kg B.W. of fenbendazole (25% pancure). The second group (B) including 5 animals were used as infected untreated control. While the third group (C) including 5 animals and kept as negative non infected control.

Regular faecal and serum samples were individually collected from the previously mentioned groups pre and 21 days post treatment for larval count per 2 grams faeces, and to determine Ca, iron and inorganic phosphorus by using reagent kits from bio Merieux, France. Sodium and potassium were determined by using a stander obtained from bio Merieux France and measured by flame photometer. For determination of serum magnesium a reagent kit obtained from Bio-Analytiques U.S.A. was used. Two animals from each group were slaughtered and their lungs searched for parasites.

RESULTS

The onset of the disease was gradually with high mortality rate. The animals suffering mainly from respiratory symptoms which comprising shallow rapid breathing, frequent broncheal cough, nasal discharge, high temperature, dyspnea accompanied by mouth breathing and some animals were recumbent, ended by death.

Larvae from which faecal contents were taken as well as the adult worms collected from sacrificed and recently dead animals showed to be infected with D.filaria. Examination of 208 animals revealed 46 were suffering from affection with lung worms (22.12 percent). The number of larvae in the faeces fell to zero 14 days after treatment in animals in group (A).

No adult worms were seen in animals slaughtered from group A, while the collected worms from group B (infested untreated control) were shown in table (1). Pancur eliminated 100 percent of adult lung worms and all symptoms disappeared gradually and all treated animals appeared healthy one month after the treatment. While two out of remained animals in infested untreated control in group (B) were died.

The results of serum bio-chemical changes before and after treatment are shown in table (2).

DISCUSSION

A trial for determination the efficacy of fenbendazole at a dose rate of 60 mg/kg B.W. (panacur) in naturally infested sheep with D.filaria was carried out in this study.

LUNG WORM IN SHEEP

Results in table (1) showed that 100% effectiveness 14 days after treatment. This agreed with MOHAMED, et al. (1988), ROSS (1974) and HOVORKA and OTHERS (1974). These authors found that this compound at a dose rate of 5 mg/kg B.W. is 100% effective against lung worm nematodes in both naturally and experimently infected sheep. Also ISLAMI and OTHERS (1976) used fenbendazole at dose rates from 20-80 mg/kg B.W. removes 100 percent of the lung worms present in sheep. While DAKKAK, et al. (1979) reported 95-100 percent efficacy of this drug. Studying the biochemical changes of sheep serum naturally infested with D.filaria (Table 2) revealed significant decrease of calcium, inorganic phosphorus and magnesium. Fourteen days after treatment the level of previously elements were more significantly altered. These results agreed with the finding of FRANKLIN, et al. (1946) and SHUMARD, et al. (1957) which they recorded that low calcium and phosphorus were probably due to lower feed intake and interference with intestinal absorption. Further more, when intake of calcium and phosphorus was increased, full use was not made of this by the infected animals which absorbed considerably less from the out than did the uninfected controls. No significant changes occurred of other elements.

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Table (1)
The effect of pancur aganist D.filari in naturally infected sheep

Mean average number of larval count/2 gm faeces	Group A infected and treated	Group B infected control	Group C non-infected control
Begining of the experiment	177	66	-ve
<u>Days post treatment</u>			
3	1	15	-ve
6	-ve	16	-ve
14	-ve	14	-ve
Post mortem adult parasites present	-ve	7	-ve

Table (2)
 Serum minerals pre & post treated with pancur in naturally infected sheep with D.filaris

Parameters	Control non-infected		Infected and treated		Infected non-treated	
	Pre treatment	Post treatment	Pre treatment	Post treatment	Pre treatment	Post treatment
Calcium (mg%)	13.21±0.46	12.99±0.53	10.45±0.45**	11.81±0.71**	10.12±0.61	10.20±0.68
Inorganic phosphorus (mg%)	7.51±0.34	6.98±0.57	5.99±0.81**	6.51±0.64**	5.10±1.14	5.65±0.71
Magnesium (mg%)	3.51±0.17	3.83±0.36	2.25±0.33**	3.71±0.17	2.31±0.22	2.08±0.05
Sodium (mmol/liter)	136.71±2.55	134.71±5.71	135.6 ±4.376	138.72±1.25	139.14±1.63	138.51±1.99
Potassium (mmol/liter)	6.41±0.79	6.87±0.86	6.66±0.58	5.51±0.78	6.50±1.73	5.51±0.78
Iron (mg%)	130.91±6.32	139.91±2.69	130.07±6.148	133.2 ±2.48	131.21±1.61	126.41±0.41

* = Stander deviation

* = Highly significant variation (P / 0.01).