

Table of Contents

	Title	Page
I.	Introduction	1
II.	Review of Literature	4
III.	Material and Methods	37
IV.	Results	47
V.	Discussion	74
VI.	Summary	82
VII.	Conclusion	86
VIII.	References	88
IX.	Arabic summary	1



Summary

Fascioliasis is a disease caused by liver flukes and is distributed throughout the world. Many Egyptian authors recorded the disease in many part of Egypt and studied the life cycle of the parasite along the Nile valley. The importance of the disease lies on its economic importance beside the fact that it has a zoonotic nature.

Diagnosis depends largely on the detection of fasciola eggs in the feces of infested animals, however, in the recent records serological test were introduced as an early detection of the parasite in the liver of affected animals.

In this study a total number of 145 Balady sheep of both sexes 3-7 years constitute the investigated number and location of the examined sheep were recorded in their respective villages. Breeding system and feed offered were also recorded.

The animals were examined clinically supported by various laboratory investigation including fecal examination, liver function test and ELISA test.

The clinical and laboratory investigation proved that 39 animals of examined cases were healthy showing signs of soundness, good body condition and were free from internal or external parasites, these were kept as control. The rest (106) were suffering from variable degrees of emaciation, debility, paleness of mucous membranes and frequent attacks of diarrhoea. Some showed edema in submandibular space in addition of sever reduction in the productive and reproductive states.

According to the finding of clinical, fecal examination and the result of the enzyme linked immunosorben assay (ELISA) and biochemical tests, animals were divided into 5 groups :



Group I: Healthy control (39).

Group II: Sheep infested with fasciola spp. either by fecal examination or results obtained from ELISA test (55).

Group III : Sheep infested with fasciola spp. which detected and other internal parasite (19).

Group IV : Sheep infested with internal parasite other than fasciola spp. (16).

Group V : Sheep showing clinical signs of fascioliasis however, fecal and ELISA test revealed negative results of infestation (16).

Clinical laboratory finding :

The important clinical signs observed on sheep of the studied groups include the following :

Appetites :

Proved to be good (39) group I, however (55) group II showed inappetance to complete loss of appetites with increase desire to drink water. Animals in group III, showed mild to complete loss of appetite the animals infest with other internal parasites other than fasciola group IV, the appetite was fairly good (a) or there was partial loss in others (7) the animals in group V showed complete loss at appetite (3) and partial loss of appetite (13).

Mucous membranes :

The mucus membranes showed variable picture, and was rosey in healthy animals pale in all affected groups associated with nasal discharges.

Body conditions :

The body condition was also variable from good to sings of marked emaciation and dehydration in affected animals in nearly all groups.

The coat (wool) :

Appeared to be good in control animals while, it was easily detached in either groups infested with fasciola or other internal parasite (IV) partial or complete alopecia was also marked in group (II).



Submandibular edema :

Submandibular edema was evident in these animals proved to be severely infested with fasciola either by fecal examination or by ELISA tests.

The character of feces : points out that positive animals exhibited diarrhea (different form, soft to soft mucoid were seen in other animals with internal parasit or those with other disease (negative to both egg examination or ELISA).

The other parasites detected during examination group III included trichostrongyle, Neoascaris, trichuris, Nematodes, coccidia.

Group IV examination showed Nematodrius, coccidia, parmphistomum spp. and others. Results pointed out that parasitological diagnosis of fascioliasis and detection of the respective specific eggs in feces is generally inadequate because the incubation period presenting clinical findings is from 2-3 months yet the flukes require a period of at least 3-4 month to attain sexual maturity. This proves that infested animals had clinical signs long before eggs could be found in feces. The results here proved that serological tests (ELISA) gave a promise indication, 74 positive case.

When compares with 22 animals showing fasciola eggs in examined feces. One can safely judge the probability by which the infested animal is identified by ELISA test as positive in this work was 90.91% sensitivity of ELISA.

False positive cases reached 9.1% and false negative cases among the examined cases reached 5.3%. ELISA results also were indicative as it revealed negative result in sheep infested with helminth parasite other than fasciola and also with these suffering ill-health not associated with the parasitic infestation (group V).



Biochemical investigations

Reduction in blood serum levels of albumin in those infested with fasciola and also in those sheep with internal parasite other than fasciola spp.

The activity of serum enzymes was attractive where elevation serum transaminases GGT and ALT ensued approximately several times when compared with the control group.

It can be concluded, in the view of the present results, that could be safely used to diagnosis fascioliasis in sheep, However further work comparing serological results and necropasy examination of naturally infested animals must be done to determine whether these negative animal actually represented non exposed sheep that failed to produce maintain detectable antibody to fasciola hepatica.



Conclusion

It could be concluded that :

1. Problems of fascioliasis in Egypt need more efforts to evaluate their magnitude and avoid further spreading of disease.
2. The practical measure of the control depends largely on the detection of the disease by easy quick and reliable method of diagnosis. This must go side by side with snail eradication, Prevention of food animals from grazing on damp pastures which harbour the snail, Routine laboratory examination of feces of animals and regular treatment of all animals and the imported animals must be free from fasciola infestation.
3. In an area where liver flukes occur every case of chronic ill-health in sheep must be considered as possible cases of fascioliasis, and it is necessary to determine if the fluke be the sole or the main contributing factor to the ill health or death of the animals.
4. Parasitological diagnosis of fascioliasis and the detection of fasciol egg in feces alone is generally inadequate because the incubation period presenting clinical finding is from days to 2-3 months, yet the flukes require a period at least 3-4 months to attain sexual maturity thus infested animals have clinical finding long before eggs could be found in the feces, making parasitological finding as an early diagnosis tool impossible.
5. ELISA may be considered the best test for routine diagnosis of fascioliasis in sheep. The probability by which the infested animals is identified by the ELISA test as positive in this work was 90.91% (Sensitivity of ELISA). The probability by which a non-diseased animal is identified by ELISA test as negative reach 94.87% (specificity of ELISA).
6. Detection of early infection is very important because it encourages early chemotherapy which are effective against immature flukes migrating through the liver parenchymal tissue.



7. In addition to clinical signs ; parasitological examination, ELISA test and the biochemical analysis of blood serum and determination of total protein and GGT-AST and ALT enzymes may confirm and support the diagnosis.