Egyptian Journal of Veterinary Sciences

https://ejvs.journals.ekb.eg/

Serological Prevalence of Anti-*Fasciola Hepatica* Antibodies in Sheep

Hasanain A. J. Gharban [1], Abbas HK. Sray [2] and Israa M. Essa [3]

[1] *Department of Internal and Preventive Veterinary Medicine, College of Veterinary Medicine, University of Wasit, Wasit, Iraq.*

[2] *Department of Microbiology, College of Veterinary Medicine, University of Wasit, Wasit, Iraq.*

[3] *Department of Parasitology, College of Veterinary Medicine, University of Basrah, Basra, Iraq.*

Abstract

THIS STUDY aims to investigate serological prevalence of *F. hepatica* in sheep with estimating the degree of positivity and association to epidemiological risk factors. Totally, 460 sheep were selected and blood sampled to testing the obtained sera by indirect ELISA. The findings revealed that the prevalence of anti-*F. hepatica* IgG antibodies in sheep was 39.78% with existence 1.96% of dubious cases. According to degree of seropositivity, heavy infestation (49.73%) was increased significantly in comparison with mild (13.11%) and moderate (37.16%) infestations. The results of risk factors showed a significant increasing in positivity, Odds ratio and relative risk in sheep of 13-24 months old; and reduction in sheep of ≤6 months old. Subsequently, mild infestation was increased at ≤6 months old; whereas, moderates and heavies were appeared at ≥25 and 13-24 months old, respectively. Seropositivity, Odds ratio and relative risk were higher in Al-Kut than Al-Hay and Al-Numaniyah. Concerning degrees of positivity, mild and moderate infestations were detected at Al-Hay; while, heavy infestation in Al-Numaniyah. No significant variation was found between females and males; however, females appeared at higher risk than males. For degrees of seropositivity, moderates and heavies were elevated significantly in males and females, respectively. In conclusion, this represents the first serological study targets detection of *F. hepatica* in sheep of Wasit province (Iraq). Therefore, additional investigations using the advanced assays (serology and molecular assay) appear necessary to determine the rate of positivity in animals, and areas at higher risk of parasitic contamination and infection.

Keywords: Fasciolosis, Liver fluke, ELISA, Ovine parasitic diseases, Iraq.

Introduction

Fasciola hepatica is a common parasitic liver fluke, which belongs to the Plagiorchiida Order under the Trematoda Class of Platyhelminthes Phylum, which infects various mammals including human causing a disease known as fasciolosis [1]. The parasite is found in all continents except Antarctica, especially in areas of sheep and cattle that infected by eating of water pants contaminated with immature parasite larvae [2]. After reaching of young worms to liver, particularly bile duct, it matured to adult and start to production of eggs [3].

Worldwide, *F. hepatica* has implicated in greatly economic losses in sheep industry as a result of acute infections, blood loss, sudden deaths and liver damages [4, 5]. Despite adequate flock nutrition, sub-acute fasciolosis may appear as low-fleece quality, rapid loss of body condition, reducing in milk production, and low growth rate; whereas, the chronic cases characterize by bottle-jaw and very poor body condition. Various authors mentioned that the high metabolic demands of advanced pregnancy or early lactation might increase the rate of mortality and decrease the lamb crop in infected ewes [6-8].

For diagnosis, the farm history and epidemiology data might be followed to suggest the fluke risk; however, traditional examination of slaughtered

*Corresponding author: Hasanain A.J. Gharban, E-mail: hghirban@uowasit.edu.iq, Tel.: 009647725028806
(Received 23/12/2023, accepted 12/02/2024)
DOI: 10.21608/EJVS.2024.257463.1742