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A survey on *Fasciola gigantica* in Slaughtered animals in Basrah abattoir

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Summary

During the period from October 1997 June 1998, 301 animals were examined at Basrah abattoir for Fasciola gigantica infection. The mean infection rate was 26.6% for all animals examined. A high percentage, intensity infection and total number of eggs burden were found in buffaloes than other animals.

Introduction

Fasciola hepatica and *F. gigantica* are responsible for considerable economic losses in Iraq (Mahdi & Al-Baldawi, 1987). According to Al-Barwari (1977) *F. gigantica* is the predominant form of liver flukes, in central and southern Iraq, where the environmental conditions have incriminated to increase the available habitats for the development and disseminated of fresh water Gastropoda Molluces. The role of lymnaeid snails as intermediate hosts in the transmission of *F. gigantica* has been already establishment in Iraq (Kadhim & Altaif, 1970). Mahdi & Al-Baldawi (1987) reported infection rate of 4.8 , 3.3 , 0.72 , 0.13% for Buffaloes, cattle, sheep and goats in Basrah respectively.

The aim of this study is to investigate the monthly incidence of fascioliasis among animals slaughtered at Basrah abattoir.

Materials & Methods

Monthly visit to Basrah abattoir was took place during the period from October 1997 to June 1998. The liver of (301) slaughtered animals were examined entirely and those infected with adult worms of *F. gigantica* flukes were inspected carefully. The gall bladder sac of infected animal with its content was taken to the laboratory of Biology department, Collage of Education where opened by a cut and the volume liquid was measured. The flukes worms counted and the content was centerfuiged for (20) minutes at (2000) rpm. Five ml of sediment was placed in a petridish and examined for eggs under light microscope. The total eggs were counted. The colour and the texture of the liquid were chicked. General morphology of a dult worms was noticed.

Result

Table 1. shows the total number of monthly examined animals at Basrah abattoir and the percentage infection with *F. gigantica* during the 9-month period from October 1997 to June 1998. Out of (301)) slaughtered animals, (80) were found to be infected. The percentage infection ranged between 14% at October 1997 to 40.6% during May 1998. The statistical of the data at different months showed a significant different (2.09 $P < 0.05$) in the percentage infection. RLSD of the means indicate that incidence that incidence infection for each month quite differ from other months (Fig.1).

The analysis variance of the data in table (2) indicate high significant different (16.51 $p< 0.001$) between the three species of animals. The overall infection rate with parasite was found in Buffaloes (45.5) followed by cattle (25.7) & sheep(6.5) (Fig. 2). Data in table 3,4 & 5 were analyzed statistically, a

high a significant different was found in the mean total number of eggs in gall bladder sac of buffaloes, cattle & sheep (3519 , 1035 7 6) respectively, (Fig. 3).

Table 1: Percentage infection of *F. gigantica* in Basrah abattoir during the period from Oct. 1997 to Jun. 1998 .

Month	Number of Examined Animal	Number of infected Animal	%Infection
October	50	7	14
November	70	12	17.1
December	31	7	22.6
January	18	7	38.9
February	24	8	33.4
March	33	10	30.3
April	20	7	35
May	32	13	40.6
June	23	9	39.1
Total	301	80	26.6

table 2:Infection % for *F. gigantica* in Basrah abattoir during the period from Oct. 1997 to Jun. 1998 in different animals.

Month	Number Examined			Number infected			%Infection		
	Sheep	Cattle	Buf.	Sheep	Cattle	Buf.	Sheep	Cattle	Buf.
October	20	20	10	2	1	4	10	5	40
November	20	25	25	0	3	9	0	12	36

December	16	5	10	0	2	5	0	40	50
January	5	10	3	0	5	2	0	50	66
February	4	9	11	1	3	4	25	33	36
March	4	13	16	2	4	4	50	30	25
April	6	9	5	0	3	4	0	33	80
May	8	11	13	1	4	8	12.5	6	61
June	10	3	10	0	2	7	0	6	70
Total	93	105	103	6	27	47	6.5	25.7	45.5

Table 3:Mean liquid volume, mean number of *F. gigantica* adult worms and number of eggs found in gall bladder of sheep during the period from Oct. 1997 to jun. 1998.

Month	**Mean liquid Volume/ml**	**Mean number worms**	**Mean number Eggs/5 ml**	**Mean total eggs**	**Inf. intensity**
October	9	21	3	5	+
November	0	0	0	0	0
December	0	0	0	0	0
January	0	0	0	0	0
February	15	0	5	15	+
March	12.5	0	7	17.5	+
April	0	0	0	0	0

May	18	0	6	22	+
June	0	0	0	0	0

Table 4: Mean liquid volume, mean number of *F. gigantica* adult worms and number of eggs found in gall bladder of cattle during the period from Oct. 1997 to jun. 1998.

Month	**Mean liquid Volume/ml**	**Mean number worms**	**Mean number Eggs/5 ml**	**Mean total eggs**	**Mean total eggs**

October	450	1	8	720	++
November	250	0	48	2400	++
December	600	1	150	18000	++
January	272	1	57	3100	+
February	102	0	22	448	+
March	102	1	28	571	+
April	155	2	11	341	++
May	51	2	12	122	+
June	128	4	7	179	+

Table 5: Mean liquid volume, mean number of *F. gigantica* adult worms and number of eggs found in gall bladder in Buffalo during the period from Oct. 1997 to jun. 1998.

Month	Mean liquid	Mean No.	Mean No.	Mean total	Mean total

	Volume/ml	worms	Eggs/5 ml	eggs	eggs
October	475	9	50	4845	++++
November	529	11	53	5607	+++
December	481	0	222	21356	+++
January	390	0	40	3120	++
February	212	0	33	1399	++
March	254	0	67	3404	++
April	290	5	37	2146	++
May	190	1	23	874	++
June	190	1	23	874	++

Fig. (1): percentage infection of total examined animal for *F. Gigantica* at Basrah abattoir from Oct. 1997 to June 1998.

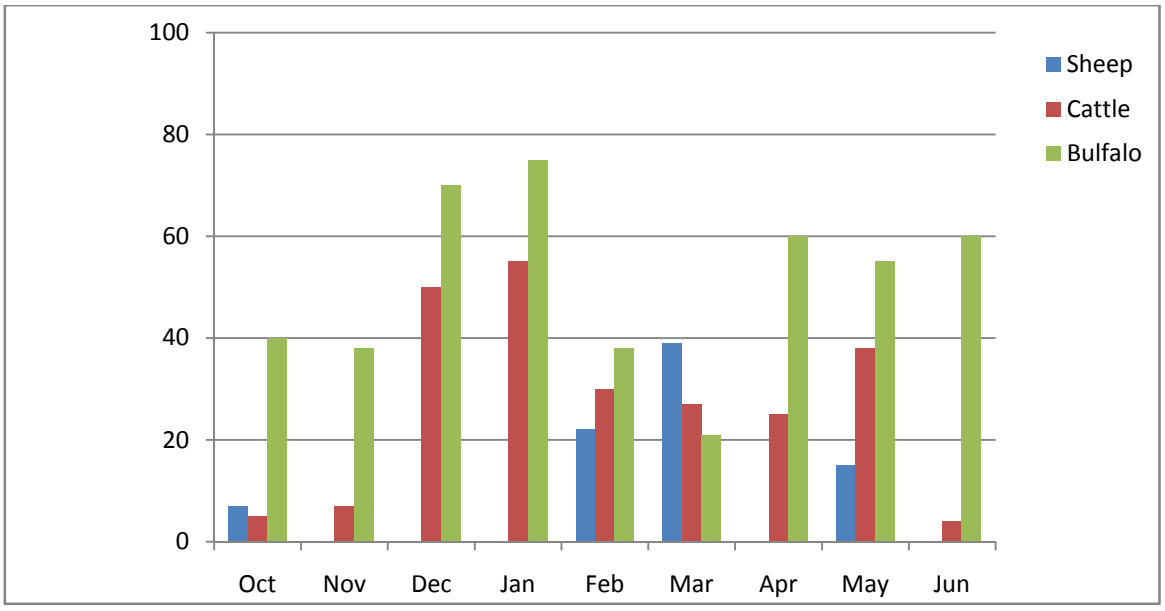

Fig. (2): percentage infection of sheep , cattle & Buffalo with *F. gigantica* at Basrah abattoir during period from Oct. 1997 to June 1998.

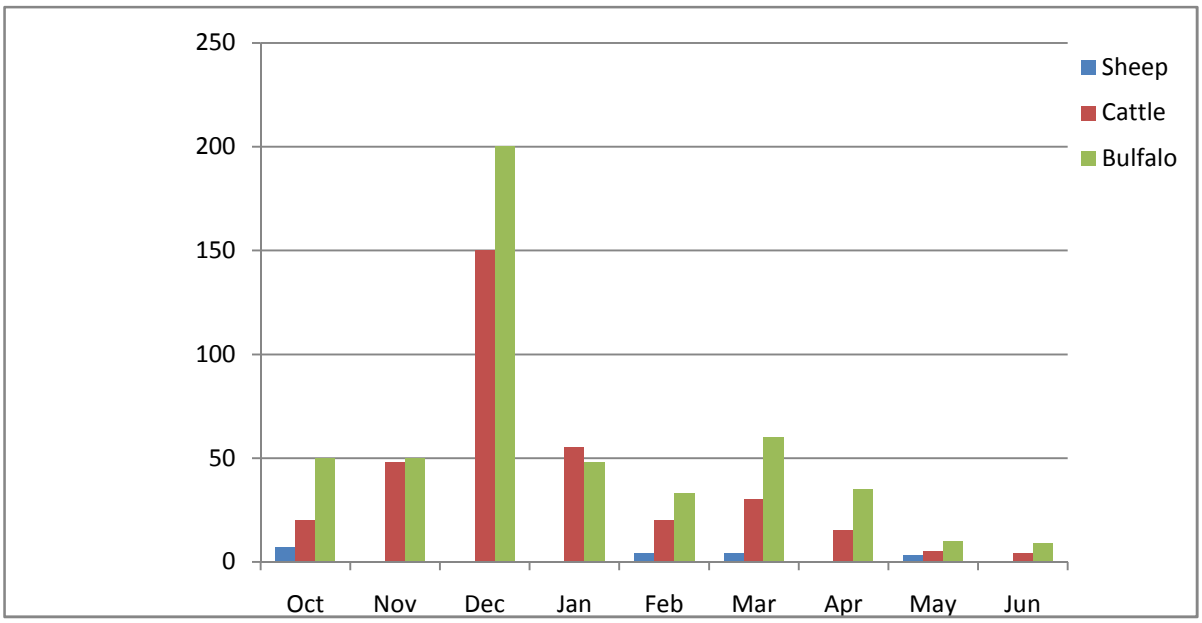

Fig. (3): mean number of eggs / 5ml *F. gigantica* of gall bladder liquid of sheep, cattle & Buffalos during period from Oct. 1997 to jun. 1998.

Discussion:

Fascioliosis considered as an endemic disease in southern Iraq (Mahdi & Al-Baldawi, 1987). The result of the present study showed an overall incidence of (26.6%) of *F. gigantica* infection at Basrah abbttoir due to random liver examination of 301 slaughtered animals during 9 months period from 1997 to 1998, with an infection rate of 45.6 , 25.7 & 6.5% for Buffaloes, cattle & sheep respectively.

Al-Mashhadani (1970) in Baghdad abattoir reported an infection rates of 42.6 3.3 & 0.4 % for Buffaloes, goats & sheep respectively, while al- Barwari (1977) reported an infection rate of 70.7 , 27.0 , 11.18 &7.1 % for buffaloes, cattle goats &sheep respectively. An examination of 125429 slaughtered animals in Basrah abattoir during 1987 by Mahdi Al-Baldawi, 887 were found to be infected with

infected rate of 4.8 , 303 ,0.72 & 0.13 % for Buffaloes , cattle , sheep & goats respectively.

Aranez(1962) stated that animals staying longer in stagenant pools & grazing in swampy or muddy places are subjected to higher degrees of infections because of being more in contact with the liver flukes metacercariae. The high infection rate may be due to a wide area favorable for its snail intermediate hosts (Kadhim & Altaif , (1970).

Generally, heavy infection rates with *F. gigantica* of the present study was found during April , May, June and lowest was found in October , November & December. Al- Barwari (1977) reported a seasonal variation with *F. gigantica* infection. High infection rates were encountered in winter months & the lowest were in summer months.

In the present study the maximum number of worm recovered from gall bladder was found in Buffaloes 222 during December followed by cattle 180 during December as well and then sheep 21 during October. Al-Barwari (1977) found 95 , 19 , 6 worms in Buffaloes, Cattle and sheep respectively. Guralp et.al (1964) reported that the presence of adult flukes in

the gall bladder of the heavily infected animals might be due to the process of competition for survival between these parasite, the result is that some individual are forced to migrate from bile duct to the gall bladder.

A change in the colour and texture were among the mains gross pathological changes of the animals liver of the present study. Gall baldder fluid was found to be brownish in colour. Guraly , (1969) reported that *F. gigantica* causes

relatively more destruction in liver tissues before setting in the bile ducts probably because of its greater size.

Halawani& Gindy (1957) stated that the disease weakens the animals, reducing the amount of milk, decreasing the breeding activates and may lead to serious fatalities in the from lives tock. Moreover , man himself may infected. In Iraq at least 5 human cases have been recorded by Tator &Guirges (1973).

Finally, the high prevalence of the disease in southern Iraq may indicate the size of the problem from economic point. Mahdi & Al- Baldawi (1987) estimated the annual loss caused by fascioliasis as 29855 Iraqi dinars, a figure , which does not include losses due to lowered productivity, deaths or the cost of treatment.

References :

1. Aranez ,J.B , (1962). The incidence of F. hepatica and F. gigantica among Cattle and Carabaos in Luzon , Philip .J .Vet .Med . 1:33 _46.
2. AL-Barwari ,S. (1977). A survey on liver infections with *Fasciola gigantica* among slaughtered animals in IRAQ . Bull. End. Dis. Vol. XvIII: 75-92.
3. Guralp, N.(1969). *Fasciola gigantica* in Turkey and its treatment with Bayer 9015 (Bilevon). Vet. Med. Rev.1:62-70.
4. Guralp, N., Ozean, C., and Simms ,B .T.(1964). *Fasciola gigantica* and Fascioliasis in Turkey . Am. J. Vet. Res. 125: 196-210.
5. Halawani , A., and Gindy , M. (1957). A short account on the economic importance of *Fasciola gigantica*, its effect on livestock and the snail vector. J. Egypt. Med. Ass. 40: 547-552.

6. Kadhim, J. K. and AL-Taif, K. I. (1970). The experimental demonstration of Lymnaeolagotiseuphratica as intermediate host of *Fasciola gigantica* in Iraq . Ann .Med .Parasit . 64:335-337.
7. Mahdi ,N,K and AL-Baldawi F.A.K (1987). Hepatic Fascioliasis in the abattoirs of Basrah. Annals of Topical Medicine and Parasitology Vol. 8: 377-379.
8. Tatar, I.H and Guirges S.Y. (1973). Cutaneous fasciolasis. A case report Bull. Med, Center. Baghdad. 1:62-71.
9. Al-Mashhadain, H.M. (1970). Morphology and ecology of lymnaeid snails in Iraq with special reference to Fascioliasis M.Sc. Thesis. University of Baghdad , Iraq.

الخلاصة:

للفترة بين تشرين اول ١٩٩٧ وتموز ١٩٩٨تم فحص اكباد واكياس الصفراء لـ ٣٠١ من الحيوانات المذبوحة في مجزرة البصرة العامة بحثا عن الاصابة بطفيلي فاشيولا جاجنتكا . بلغت نسبة الاصابة الاجمالية لجميع الحيوانات المفحوصة حوالي ٢٦.٦% كانت نسبة وشدة الاصابة وعدد البيوض الموجودة في كيس الصفراء للجاموس هي الاعلى من بقية الحيوانات الاخرى المفحوصة.

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