



Study the Rate of Hydatid Cysts, Liver Fluke, Pneumonia and Hepatitis in Al-Najaf Slaughter House, Al-Najaf, Iraq

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Abstract

The study was conducted from first of December 2015 till end of November 2016. Animal slaughters were examined macroscopically to determine the parasitic infection (Hydatid Cyst, Fascioliasis, Lung worms) and another cases of Pneumonia and Hepatitis.

The animals which were slaughtered during this study was 94106 Sheep, 23131 Cattle, and 5235 Buffaloes.

The Percentages of Hydatid cysts in Sheep was 1.04 % and Liver fluke 0.56%, pneumonia 0.29% and hepatitis was 0.34 % with increase the rate in winter 1.33%, 0.87%, 0.54%, and 0.53% respectively while Lung worms 0.73 % increase the percentage in Autumn 0.71%.

In Cattle, the percentage of Hydatid Cysts 1.59%, Liver Fluke 0.71%, Lungworm 0.13%, with increase the rate in Autumn 5.11%, 2.56%, 0.73% respectively, Hepatitis 0.34% , the highest percentage was in summer 0.32% and pneumonia the highest percentage was in spring 0.56%.

The rate of Hydatid In Buffaloes 1.03%, Fiver Flukes 0.61 % , with increase the incidence in winter 1.93%, while Lung worms 0.15%, pneumonia 0.31%, hepatitis was 0.14% the highest was in spring 0.25%, 0.41% and 0.49% respectively.

دراسة معدل الاصابه بديدان الكبد والرئه والتهاب الكبد والرئه في مجزرة النجف - العراق.

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الخلاصة

اجريت هذه الدراسة في مجزرة النجف الحكومي للفترة من بدايه شهر كانون الاول 2015 وحتى نهايه شهر تشرين الثاني 2016 للتعرف على الاصابات الطفيليه في الرئه (الاكياس المائيه وديدان الرئه) والكبد للحيوانات الذبوحه من الاغنام والابقار والجاموس وكذلك جالات التهاب الرئه والتهاب الكبد. العدد الكلي للحيوانات المذبوحه خلال فتره الدراسه كانت في الاغنام 94106 والابقار 23131 والجاموس 5235. ووجد ان نسبة انتشار الاصابه بالاكياس المائيه في الاغنام 1.04% واعلى نسبة اصابه في الشتاء 1.33%, ديدان الكبد 0.56% واعلى نسبة اصابه في الشتاء 0.87%, وديدان الرئه 0.73% واعلى نسبة اصابه في الخريف 0.71%, التهاب الرئه 0.29% واعلى نسبة اصابه في الشتاء 0.54%, التهاب الكبد 0.34% واعلى نسبة اصابه في الشتاء 0.53%.

وجد ان نسبة انتشار الاصابه بالاكياس المائيه في الابقار 1.59% واعلى نسبه اصابه في الخريف 5.11% , ديدان الكبد 0.71% واعلى نسبه اصابه في الخريف 2.56% , ديدان الرئه 0.15% واعلى تسبه اصابه في الربيع 0.25% , التهاب الرئه 0.19% واعلى نسبة اصابه في الربيع 0.56% , التهاب الكبد 0.34% واعلى نسبه اصابه في الصيف 0.32% . ووجد ان نسبة انتشار الاصابه بالاكياس المائيه في الجاموس 1.03% واعلى نسبه اصابه في الشتاء 1.93 % , ديدان الكبد 0.61 % واعلى نسبه اصابه في الشتاء 1.93 % , ديدان الرئه 0.15% واعلى تسبه اصابه في الربيع 0.25% , التهاب الرئه 0.31% واعلى نسبة اصابه في الربيع 0.41% , التهاب الكبد 0.14% واعلى نسبه اصابه في الربيع 0.49% .

Introduction

Slaughter houses are very important for detecting diseases of both economic and public health importance and its regulations, represents a key control point of livestock production chain(1).

The human and domestic animals are intermediate hosts of *E.granulosus* (Echinococcosis is a zoonotic infection) and the dog its definitive host(2). *Dictyocaulus viviparus* causes significant economic losses and responsible for severe parasitic bronchitis in dairy animals(15).

Lung worms in Iraq most common parasitic infection in winter and cause the medium to heavy infestation(4). In Kirkuk(7) found that the distribution of lung worm in Sheep was 0.55%, Goats was 0.22% and Cattle was 2.98% and In Mosul Slaughterhouse (16) reported 37%.

In study in Baghdad in April-July, 1981 were examined for helminthes parasites; 18.2 % of the cattle, 14.3% of the sheep, 72.0% of the camels, 0.6% of the goats, and 8.3 % of the buffaloes were infected with cestodes and trematodes.(3)

The morbidity of hydatidosis in Al-Najaf slaughterhouse in 2009 was 13.53% (3789 animal from 117908) among the whole slaughtered animals with a value of, 3.6 % in buffalo, 4.4 % in cattle, 4.18 % in sheep(4). While in another study in the liver of sheep in abattoir of Kirkuk province during May 2010 the percentage of hepatic lesions which are 20.9%, and the prevalence of parasitic infection and hepatitis are 26.3%, 22.3% respectively(17).

Fascioliasis is widespread disease in Iraq and it is found in all parts of the country

(9). In AL-Sheikh Omer slaughter house, (7) found that the rate of fascioliasis was Cattle 27% and Sheep 7.1%, and In Basrah (11) reported that the rate of infection in Sheep 0.7% and Cattle 3.2 % . While In Babylon found that the rate of infection in cattle with *F. gigantica* was 19.3%. The highest rate was in summer 25.5%(11).

In Kirkuk slaughter house in 2012 , the rate of hydatid cysts In sheep was 0.77%, liver flukes 0.36%, lung worms 0.19%, and pneumonia 0.58%, the highest rate was in summer 0.74% while hepatitis was 0.32%, the highest was in winter 0.42% (12). In Iran the prevalence of *Faciola hepatica* in sheep 8.57%(5,6).

This study was conducted to investigate the rate of Hydatid cysts, Fascioliasis, Lung worm, Hepatitis and Pneumonia in Sheep, Cattle, and Buffalos .

Materials and Methods

This study was conducted in Al- Najaf slaughter house and the data was collected mainly done at weekly interval.

The numbers of animals examined were 94106 sheep, 23131 cattle, and 5235 buffaloes. All animals presented for slaughter were physically and clinically observed prior to slaughter and inspection of the animals was made while at rest or in motion for any obvious sign of disease.

Post slaughter examination involved visual examination of carcasses and organs of slaughtered animals were inspected macroscopically specially Lung and Liver to show the presence of Helminthes in addition to Hepatitis and Pneumonia.

Results and Discussion

The results of our work showed a total number of Sheep, Buffaloes and Cattle were slaughtered during the period of study (beginning of December 2015 till end of

November 2016) were 23131, 94106, and 5235 respectively.

The Sheep and Buffaloes slaughtered was highest in summer while the Cattle slaughtered was highest in spring (Table 1).

Table (1) Number of animals slaughtered according to seasons

Animal	Winter 12-1-2	Spring 3-4-5	Summer 6-7-8	Autumn 9-10-11
Sheep	4857	5746	9720	8669
	5743	11157	9780	7232
	4617	11744	9419	5422
Total (94106)	15217	28647	28919	21323
Cattle	1324	1370	1667	2024
	1562	2424	2201	2119
	1371	2660	2493	1916
Total (23131)	4257	6454	6361	6059
Buffaloes	335	342	414	516
	372	426	431	559
	328	451	590	471
Total (5235)	1035	1219	1435	1546

The number of Sheep slaughtered was highest than Cattle and buffaloes because people prefer sheep meat than other animals. The highest number of sheep slaughtered in summer and spring season may be related to season of parturition of sheep and preference of people to young lamb's meat.

The data in table 2 explain the prevalence of Hydatid cysts infestation was highest in Cattle 1.59% followed by Sheep 1.04% and 1.03% in Buffaloes.

The incidence of Liver Flukes in these animals was highest in Cattle 0.71%, followed by Buffaloes 0.61%, rather than Sheep 0.56% while the incidence of lung worms was highest among slaughtered Sheep 0.73% followed by Buffaloes 0.15% and Cattle 0.13%. The Hepatitis in liver of slaughtered ruminants that highest rate among Sheep 0.34% and Cattle 0.34% followed by Buffaloes 0.14%.

The percentage of this study agreement with (18) sometimes due to eats of concentration rations when cause reduce acidity of rumen, this is cause reach of rumenal Bacteria to liver through hepatic portal vein (19).

The rate of pneumonia among slaughtered animals was highest in Buffaloes 0.31%.

Table (2) Rate of Hydatid cysts, Liver fluke, and Lungworms, hepatitis and pneumonia in Sheep, Cattle, and Buffaloes.

Animals	No. examined	Hydatid cysts (%)	Liver fluke (%)	Lungworm s(%)	Hepatiti s(%)	Pneumon ia (%)
Sheep	94106	977(1.04)	527(0.56)	690(0.73)	322(0.34)	274(0.29)
Cattle	23131	367(1.59)	165(0.71)	31(0.13%)	32(0.34)	44(0.19)
Buffaloes	5235	54(1.03%)	32(0.61)	8(0.15%)	18(0.14)	16(0.31)

In present study the rate of Hydatid Cysts was 1.59% in Cattle and 1.04 % in Sheep which was more than that reported in Kirkuk slaughter house in 2012 (14), and These difference between them may be related to period of study and to less number involved in this study. When comparing the results with other countries : In Tabriz,Northern region in Iran (16) recorded the rate of Liver Hydatid Cysts in sheep was 23.57% in the municipal slaughterhouse. Epidemiology of Hydatid Cysts was studied In Syria by (15) and found that rate in Cattle 4.2% and Sheep 6.9% .In another study in Bangladesh the rate of Hydatid Cysts in Buffalos was 42.36% were infected. The differences between the rates in various cities could be brought as: climatologic conditions, hygienic status of slaughterhouses, contamination rate in the intermediate host ,dog in each place, and feeding status of animals, and slaughtering manner.

The percentage of liver fluke in slaughtered Cattle in our study was 0.71%,it Table (3) Prevalence of infections in sheep.

Season	No. examined	Hydatid cysts (%)	Liver fluke (%)	Lungworms(%)	Hepatitis (%)	Pneumonia (%)
Winter	15217	203 (1.33%)	132(0.87%)	76(0.499%)	80(0.53%)	82(0.54%)
Spring	28647	304(1.06%)	97(0.34%)	47(0.16%)	81(0.28%)	109(0.38%)
Summer	28919	174(0.60%)	132(0.46%)	64(0.22%)	90(0.31%)	66(0.23%)
Autumn	21323	155(0.73%)	166(0.79%)	152(0.71%)	96(0.45%)	75(0.35%)

The data in table (4) indicates the rate of diseases in Cattle. Hydatid cysts was highest in autumn 5.11% then summer 3.85%, Spring 2.74% and winter 2.35%.The rate of liver fluke was highest in Autumn 2.56%, Summer 1.72%,spring 1.54%, and Winter 1.03%.The lung worm infection was highest in Autumn 0.73%,followed by Summer 0.20%,Winter 0.14%,and Spring 0.04% .

Hepatitis rate was highest in Summer 0.32% followed by Autumn 0.31%Spring 1.12% and in Winter 0.26% .Pneumonia was commonest in Spring 0.56% followed by Summer 0.44%

is lower than that perversely study in Baghdad and Kirkuk 7.1 % and 1.27% respectively (7, 14).The low percentage of Liver fluke in this study we thought due to low rates of snails intermediate host in al-Najaf. The seasonal distribution of diseases in slaughtered ruminants was varied in different animals.

Table (3) Prevalence of infections in Sheep, the rate of Hydatid cysts was highest in Winter 1.33% followed by 0.73% , Summer 0.60% and the lowest was in spring 1.06%.The rate of Liver fluke was highest in Winter 0.87% followed by Autumn 0.79%, Summer 0.46%,and Spring 0.34%.

The lung worms were highest in Autumn 0.71% , followed by Winter 0.499%, Summer 0.22%, and spring 0.16% respectively .The rate of pneumonia was highest in Winter 0.54 % ,spring 0.38% ,Autumn 0.54 % and Summer 0.23%. While the rate of hepatitis was highest in Winter 0.53% followed by Autumn 0.45%, Summer 0.31% and Spring 0.28%.

,Autumn 0.31% and Winter 0.28% this is agreement with (21) in increase the rate of pneumonia in spring and Summer sometime due to the change of weather at this period.

Table (4) Prevalence of infections in cattle

Season	No. examined	Hydatid cysts (%)	Liver fluke (%)	Lung worms (%)	Hepatitis (%)	Pneumonia (%)
Winter	4257	100(2.35%)	1.03%	6(0.14%)	11(0.26%)	12(0.28%)
Spring	2660	73(2.74%)	41(1.54%)	1(0.04%)	7(0.26%)	15(0.56%)
Summer	2493	96(3.85%)	43(1.72%)	5(0.20%)	8(0.32%)	11(0.44%)
Autumn	1916	98(5.11%)	49(2.56%)	14(0.73%)	6(0.31%)	6(0.31%)

The data in table (5) indicates the rate of diseases in Buffaloes. The rate of hydatid cysts was highest in Winter 1.93 % then Autumn 0.84%, Summer 0.70 %, and Spring 0.66%.The rate of Liver fluke was highest in winter 1.93 % spring 0.41%, summer 0.35%, and Autumn 0.32%, The lung worm infection was highest in spring 0.25%, followed by Winter 0.19%, Summer 0.07 %, and no lesion in Autumn. Hepatitis rate was highest in Spring 0.49% followed by Winter 0.48%, Summer 0.28%, and Autumn 0.19%.Pneumonia was commonest in spring 0.41% followed by Winter 0.39%, Summer 0.28%, and Autumn 0.19%.

Table (5) Prevalance of infection in Buffaloes.

Season	No. examined	Hydatid cysts (%)	Liver fluke (%)	Lungworms(%)	Hepatitis (%)	Pneumonia (%)
Winter	1035	23(1.93 %)	20(1.93 %)	2(0.19%)	5(0.48%)	4(0.39%)
Spring	1219	8(0.66%)	5(0.41%)	3(0.25%)	6(0.49%)	5(0.41%)
Summer	1435	10(0.70%)	5(0.35%)	1(0.07%)	4(0.28%)	4(0.28%)
Autumn	1546	13(0.84%)	(0.32%)5	0	3(0.19%)	3(0.19%)

In Sulaimania slaughter-house (1) found the highest rate was in November, this might be related to difference in geographical distribution, sample size and period of study. In Babylon Al-Delimi (11) found the highest rate in summer and lowest in winter months, this may be due to different in geographical distribution variation in environmental conditions. In Kirkuk The rate of liver fluke in sheep was highest in summer 0.43% while in cattle The rate of liver fluke was highest in winter 1.57 %.

Table (6).explain the frequency distribution of Hydatid cysts lesions in Liver and Lung Sheep, cattle, and Buffaloes ,which is highest in liver rather than in lung .

Animals	No. examined	Hydatid cysts (%) (Liver and Lung)	Hydatid cysts (%)	
			Liver	Lung
Sheep	94106	1.04 %	0.80%	0.24%
Cattle	23131	1.59%	1.38%	0.21%
Buffaloes	5235	1.03%	0.84 %	0.19%

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