DETECTION THE PREVALENCE OF SOME GASTRO - INTESTINAL PROTOZOA IN BUFFALOES OF BABYLON GOVERNORATE.

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ABSTRACT

The study carried out in order to investigation the prevalence of gastro -intestinal protozoa in feces of buffaloes in Babylon governorate (Iraq) during the period between November 2014 to May 2015.Atotal of 200 fecal samples of buffaloes (50calves , 60 males and 90 females) ,the highest prevalence rate with *Eimeria spp*. was in calves (36%) ,males (8.3%) females (10%) followed by closed rate with *Cryptosporidium spp*. which was recorded (16%) in calves , (13.3%) in males, and (4.4%) in females ,the prevalence rate was reported with *Giaridia duodenalis* in calves (20%) and (11.6% ,8.8%) in males and females respectivly. According to the age and sex , calves and males were showed highly infection rates with protozoa.

INTRODUCTION

Buffaloes are the most important species of domestic livestock as a source of dairy, meat, manure and drought power in Iraq,
the parasitic diseases are not less important in buffaloes than other infectious diseases. These mainly include gastro-intestinal helminthiasis, coccidiosis, fascioliosis and mange(1).

Parasitism of gastro- intestinal tract (GIT) is one of the major afflictions responsible for enormous economic losses in terms of calf mortality in buffaloes(2,3).

Protozoan diseases are major constraint in progress of dairy farming all over the world, particularly in developing countries (4, 5).
Coccidiosis is one of the most pathogenic intestinal diseases caused by different *Eimeria* species belonging to phylum Apicomplexa. *Eimeria* infections are responsible for huge economic losses to for livestock industry in terms of mortality and morbidity particularly in young calves (6). Bloody diarrhea, dehydration, rough hair coat, reduced growth rate, anemia, weakness and weight loss are the signs of coccidiosis in water buffaloes (7). The disease is present in acute, sub acute and chronic forms.
Cryptosporidium and *Giardia* are two parasitic protists that mainly infect the intestinal tract and cause enteric disease in humans and various other animals ,it causes significant morbidity and mortality, particularly among young animals (8, 9,10).

Economic losses are caused by gastrointestinal parasitism are in a variety of ways: they cause losses through lowered fertility, reduced work capacity, involuntary ling, a reduction in gains food intake and lower weight, lower milk production, treatment costs, and mortality in heavily parasitized cattle and buffaloes (2,3).

Among the predisposing factors of internal parasites infection are climates, nutritional deficiency, grazing habits, immunological status, pasture management, presence of intermediate host and vector and the number of infective larvae and eggs in the environment. Damages inflicted to the health and productivity includes loss in body

weight, poor reproductive performance, digestive disturbance, and emaciation for longer period (11).

The aims of the present work were include detection the prevalence of gastrointestinal protozoa in feces of local breed buffaloes in Babylon governorate.

MATERIAL AND METHODS

Area of the study:-

The study included 200 animal of buffaloes (50calves , 60 males and 90 females) during the period of November 2014 to May2015 at Babylon governorate.

Samples collection:-

Fecal samples were collected in clean containers.

Samples examination:-

Samples were examinated by using direct smears (wet and lugol) and concentrated flotation method (shethera's solution) (12, 13). Moreover staining method was employed in this study (modified Ziehl – Neelsen) as described by (14).

Statistical analysis:

Data was analyzed using Chi-square statistical design .

RESULTS

Infection rate :-

The overall prevalence of gastro-intesinal protozoa of buffaloes of Babylon is shown in table (1). Out of 200 examined animals ,the infection rates of *Eimeria spp*., *Cryptosporidium spp*. and *Giaridia duodenalis* were 16%, 10% and 12.5 % respectively with a significant ($p < 0.01$) difference .

Table (1) Prevalence of different gastrointestinal species of protozoa in buffaloes of Babylon.

species of protozoa	No.of fecal samples examined	positive	%
Eimeria spp.	200	32	16
Cryptosporidium spp.	200	20	10
Giaridia duodenalis	200	25	12.5
Total	200	77	38.5

*p < 0.01

Effect of age in the infection rate:-

In buffalo calves *Eimeria spp* .was identified in (36%) of fecal samples ,while *Cryptosporidium spp*. (16%) and *Giaridia* duodenalis was (20%) while in adults the infection rates of these parasites were 9.3% ,8% and 10% respectively with a significant (p < 0.01) between calves and adults ; also between parasites in both calves and adults .

Table (2) Percentage of infection with gastro-intestinal protozoa in calves and adult buffaloes of Babylon.

species of protozoa	Calves		Adults	
	Positive	%	Positive	%
Eimeria spp.	18/50	36	14/150	9.3
Cryptosporidium spp.	8/50	16	12/150	8
Giaridia duodenalis	10/50	20	15/150	10
Total	36/50	72	41/150	27.3

*p < 0.01

Effect of sex in the infection rate:-

Table (3) was show a high infection rates were recorded in adult males in *Cryptosporidium spp.* (13.3%) and *Giardia duodenalis* (11.6%) than adult femals (4.4%,8.8%) respectively ,while a low infection rate (8.3%)
was recorded in *Eimeria spp.* in males than females (10%) , with significant ($p < 0.01$) between both sexes and between parasites in each males and females .

Table (3) infection rates of (males and females) by gastro-intestinal protozoa in Buffaloes of Babylon.

species of parasite	Males		Females	
	Positive	%	Positive	%
Eimeria spp.	5/60	8.3	9/90	10
Cryptosporidium spp.	8/60	13.3	4/90	4.4
Giaridia duodenalis	7/60	11.6	8/90	8.8
Total	20/60	33.3	21/90	25.5

DISCUSSION

The prevalence rate of *Eimeria* in calves was 36% , that result was different from those reported in Buffalo calves of Haryana (15) , who recorded low infection rate with *Eimeria spp*. (16.10%).(16) suggested that inadequate feeding of colostrums,exposure to contaminated environment ,under feeding and poor sanitation are some predisposing factors for higher occourence of coccidiosis in calves.High and low levels of prevalence have been confirmed in various studies concerning these protozoa in buffaloes like (49.6%) in Pakistan (17) ; (3.39%)in Bangladesh (18) ,while (6) reported 75% of water buffaloes are suffered from different *Eimeria spp*. In Turkey 1.19% in India (19).

It have been observed that ,the prevalence of *Eimeria spp.* was slightly higher in females (10%) than in males (8.3%) was shown in table (3) . In previous study of (18)

had a similar findings ,who recorded infection rate in females (7.14%) and males (2.58%) of buffaloes.

Prevalence of *Cryptosporidium spp*. infection in present study was the highest in calves (16%) than adults buffaloes (8%). Studies carried out in calves have recorded prevalence of (24.2%) and (3.52%) in India (20, 15).In Egypt (21) have confirmed that 14.19% of the examined calves were positive for *Cryptosporidium spp.*

In this study ,the prevalence of *Cryptosporidium spp.* in males and females were 13.3%,4.4% respectively , these findings were different from the values which recorded by (22) in males (45.28%) and females (45.94%) in buffaloes of Iran.

In present study *Giaridia duodenalis* was identified in calves (20%) and adults (10%), while infection rate in males (11.6%) was slightly higher than females (8.8%) . In recent study (23) can detected *Giaridia duodenalis* in buffaloes of Australia (13.1%), while (24) recorded (26.3%) infection rate in water buffaloes of Italy.

The higher infection rate in young animals than that in adults indicated resistance , because of lesser exposure to different species of protozoa compared with the adults animals. It was, however, interesting to note that prevalence was higher in males compared with females. Normally, females are assumed to be more infected due to stress of pregnancy and parturition. This may be due to the practice of stall feeding females around pregnancy and thus lesser exposure to pasture contamination or males are more action than females which more exposure to the infectious forms of these parasites (oocysts and cysts).

التحري عن مدى انتشار أوالي المعدة والأمعاء في براز الجاموس في محافظه بابل

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الخلاصه

اجريت هذه الدراسة من اجل التحري عن مدى انتشار اوالي المعدة والامعاء في براز الجاموس في محافظة بابل بدءا من شهر تشرين الثاني 2014 ولغاية شهر ايار 2015 . من مجموع 200 عينة من برازالجاموس (50 عجل،60 ذكور،90 اناث)، سجلت اعلى نسبة اصابة ب .Eimeria spp في العجول (36%) ، الذكور(3.8%) و الاناث (10%)، تلاها طفيلي .Cryptosporidium spp اذ كانت نسب الاصابة (16%) في العجول و(13.3%) في الذكوروفي الاناث (4.4%) وكانت نسبة الاصابة المسجلة لطفيلي Giaridia duodenalis في العجول (20%) و(6.11% ، 8.8%) في الذكور والاناث على التوالي . اعتمادا على العمر والجنس اظهرت النتائج نسب اصابة عالية بالاوالي في العجول والذكور.

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