قسم طب الحيوان
كلية الطب البيطرى - جامعة أسيوط
رئيس القسم : أ.د / ابراهيم سيد أحمد

دراسة مقارنة على طفيليات الجهاز الهضمى فى الابقار والجاموس مع التغيرات الناتجة فى صورة الدم فى محافظة أسيوط

مراد اسماعيل ، ابراهيم سيد ، طه العلاوى

استهدفت هذه الدراسة بيان أهم الديدان التى أصابت الجهاز الهضمى فى ١٠٠ جاموسة و ١٠٠ بقرة فى محافظة أسيوط مع دراسة مدى تأثير هذه الاصابة على صورة خلايا الدم . وقد أوضح الفحص الاكلينيكى لهذه الحيوانات الموجودة فى نفس الظروف البيئية وفى سن ٢ - ٤ سنوات تفاوتا ملحوظا فى الاعراض من حيث الضعف العام - الشهية المنحرفة - سهولة سقوط الشعر - اسهال - امساك - تراكم السوائل تحت الجلد فى الفك السفلى - شحوب الغشاء المخاطى مع زيادة فى معدل النبض والتنفس وقد أوضح الفحص الباراسيتولوجى لبراز هذه الحيوانات وجود بيض الترايكوسترونجيليس والاسكارس والمونيزيا والدودة الكبدية والبارامفستومم بصورة مرضية فى ٥٣٪ من الجاموس و ٦٢٪ من الابقار . أى أن الجاموس والابقار تصاب بنفس أنواع الديدان فى صورة منفردة أو وجود اكثر من نوع من الديدان فى الجهاز الهضمى لحيوان واحد وقد تبين أن الجاموس اكثر اصابة بخليط من الديدان عنه فى الابقار .

وقد تبين من هذه الدراسة أن للطفيليات السابقة الذكر تأثير واضح فى صورة خلايا الدم فى الجاموس عنه فى الأبقار ولقد نتج عن الاصابة بهذه الطفيليات انخفاض فى العدد الكلى لكرات الدم الحمراء ونسبة الهيموجلوبين والهيماتوكريت مع زيادة فى العدد الكلى لكرات الدم البيضاء فى كل من الجاموس والأبقار المصابة بالمقارنة بالحيوانات الغير مصابة .

أما عن العد التصنيفى لكرات الدم البيضاء فظهرت زيادة ملحوظة فى الخلايا الحمضية والمتعادلة فى الجاموس عنه فى الأبقار بينما ظلت باقى الخلايا فى المعدل الطبيعى لها .

Dept. of Animal Medicine,
Faculty of Vet. Med., Assiut University,
Head of Dept. Prof. Dr. I.S. Abdallah.

COMPARATIVE STUDIES ON GASTROINTESTINAL PARASITISM OF CATTLE AND BUFFALOES WITH SPECIAL REFERENCE TO HAEMATOLOGICAL CHANGES AT ASSIUT GOVERNORATE

(With 4 Tables)

By
M.I. MOURAD; I.S.A. ABDALLAH and T. EL-ALLAWY
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SUMMARY

This investigation was carried on 100 water buffaloes and 100 cattle at Assiut Governorate. Faecal examination indicated that water buffaloes were infested with the same parasites of cattle (Trichostrongylus sp., Ascaris sp., Monezia sp., Fasciola sp., and paramphistomum sp.,). The degree of infestation was higher in cattle than that in water buffaloes where the infestation reached 62% in cattle and 53% in buffaloes.

The effect of gastrointestinal parasitism on blood picture was more clear on water buffaloes than that in cattle where a decrease in total erythrocytic count (T.R.B. Cs.), haemoglobin percentage packed cell volume (PCV) was noticed, while total leucocytic count (T.W.B.Cs.), Eosinophils, neutrophils were increased and the other types of leucocytes were remained within the normal range.

INTRODUCTION

Water buffaloes and Cattle are important domestic animals in all the counteries of Egypt, where they have an economical importance in milk, leather production beside their rule in helping farmers in their work.

Gastrointestinal parasites of domestic animals were studied by many investigators, NAGATY et al. (1947), SOLIMAN (1960), SELIM et al. (1970), SELIM and RAHMAN (1972) and WARD et al. (1979). The most mentioned investigations considered gastrointestinal parasitism of water buffaloes as that of Cattle.

The scopy of this work is to investigate the following points:

1- degree of gastrointestinal parasitism in both water buffaloes and Cattle.
2- The most important parasites which infest the gastrointestinal tract of water buffaloes and Cattle.
3- Effect of gastrointestinal parasitism of water buffaloes and cattle on their blood picture.

MATERIAL and METHODS

100 water buffaloes and 100 cattle which have the same environmental conditions, the same age (2-4 years), clinically healthy except from the clinical signs of gastrointestinal parasitic infestation were studied from November, 1984 to April, 1985.

Faecal samples were collected from each animal in a small plastic bag and studied for gastrointestinal parasitic infestation using sedimentation, floatation technique. BENBROOK and SLOSS (1955) beside the macroscopical examination.

Blood samples were collected from jugular vein of each animal in bottles containing ethylene diamine tetraacetic acid (E.D.T.A.) as anticoagulant for haematological studies.

Total erythrocytic count (T.R.B.Cs.), packed cell volume (PCV), Haemoglobin content (Hb), total leucocytic count (T.W.B.Cs.) and differential leucocytic count were studied, JOHN (1977) methods for collecting blood samples and blood examination was used.

RESULTS.

Water buffaloes were less infested with gastrointestinal parasites than cattle, where the ratio of infestation reached 62% in cattle and 53% in water buffaloes (Table 1).

Water buffaloes and cattle were infested with the same parasites and the most parasites which infested them were nematodes (Family Trichostrongylidae and Ascaris) cestodes (Monezia sp.), Trematodes (Fasciola and paramphistomum sp.) (Table 2).

The infested animals showed various degrees of depraved appetite, anaemia, pale mucous membranes, easily detached hairs, bottle jow, diarrhoea and constipation, increase in respiratory and pulse rates.

Multiple infestations with two or more species of the above mentioned parasites were more observed in water buffaloes than in cattle (40% in water buffaloes and 31% in cattle) table 2.

Water buffaloes reflex more changes in haematological picture than cattle where infestation leads to increase in total W.B.Cs. Eosinophilia, relative neutrophilia, decrease in total R.B.Cs. haemoglobin content and packed cell volume Basophils, monocytes lymphocytes and band cells remained within the normal value (Tables 3&4).

DISCUSSION

Our results shows that 62% of examined cattle and 53% of examined buffaloes were infested with gastrointestinal parasites. This ratio was in agreement with WARD et al. (1979). Who mentioned that round worm eggs were found in over half the faecal samples of beef cows. SELIM et al. (1970) related the high ratio of infestation in U.A.R. to the suitable climate of moderate temperature and humidity beside to the agricultural and geographical situation.

The presence of paramphistomum sp. eggs in 5 water buffaloes and 2 cattle was in conformity with SEY (1977) who stated that paramphistomum microbothrium was found in buffaloes and cattle beside paramphistomum gotoi which found in buffaloes only. The infestation of water buffaloes and cattle with Trichostrongylus sp. was 30, 37% respectively and that was nearly similar to the results obtained by SELIM et al. (1970) who reported the percentage 30% in imported cattle from Sudan. The percentage of infestation with fasciola sp. in this work was less than that obtained by SELIM et al. (1970).

The present erythrocytic count, leucocytic count, haemoglobin content, packed cell volume and differential leucocytic count (table 3-4) of non infested buffaloes and cattle showed an individual variation and the range was nearly similar to that recorded concerning cattle in Vet. haematology (SCHALM, 1970).

The gastrointestinal parasitism leads to decrease in T.R.B.Cs. count, haemoglobin content, PCV and slight increase in T.W.B.Cs. count in both water buffaloes and cattle (table 3) The change in haematological picture due to gastrointestinal parasitism was more clear in water buffaloes than that in cattle, where eosinophilia reached 8-10%, 6-7% respectively. In the same time slight neutrphilia reached 50% and 46% respectively. The changes in blood cells constituents obtained in this work due to gastrointstinal parasitism were nearly similar to that mentioned by GALLAGHER (1962), PACHALAGE et al. (1973) and GRZEBULA (1978) in sheep.

There is no avaliable literature discuss the differences between changes in blood picture of water buffaloes and cattle due to gastreointestinal parasitic infestation.

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Table (1)
Percentage of infestation in both water Buffaloes and Cattle

	Cattle	%	Water buffaloes	%
infested	62	62%	53	53%
non infested	38	38%	47	47%
total number	100	-	100	-

Table (2)
Most common parasites infested gastrointestinal tract of water buffaloes and cattle

Animal Parasites	Cattle	Water buffaloes
Trichostrongylus sp.	37	30
Ascaris sp.	12	15
Monezia sp.	6	5
Fasciola sp.	2	1
Paramphistomum sp.	5	2
Multiple infestation	31%	40%

Table (3)
Blood picture of infested and non infested cattle and water buffaloes

	Cattle		Watter buffaloes	
	non infestes	infested	non infested	infested
T.R.B.Cs. countx10	7- 9.2	5.9- 6.5	6.3-9	5 - 6.9
T.W.B.Cs. countx10^3	5- 8	6.2- 9.2	5 -9	7 -11
Hb gm%	70-82	40 -45	65 -80	34-40
PCV.	35-45	30 -38	35 -40	25-30

Table (4)
Differential leucocytic count in infested and non infested water buffaloes and cattle

	Cattle		Water buffaloes	
	non infested	infested	non infested	infested
neutrophils	12-40	18-46	14-45	19-50
Eosionphils	1 -3	6 -7	1 -3	8-10
Basophils	0 -1	0 -1	0 -1	0 -1
Monocytes	1 -3	1 -3	1 -2	1 -2
Lymphocytes	35-56	35-56	35-70	35-70
Band cells	0 -2	0 -2	0 -2	0 -2