

قسم : الطفيليات

كلية الطب البيطري - بنها •

رئيس القسم : أ.د. / محمد رجب

## بعض الدراسات على التايلريا أنيولانا

### في محافظة القليوبية

نجوى عيد ، محمد عبيد ، أحمد الصوالحي ، حسام العطار

تتناول الدراسة تحديد نسبة الاصابة بالتايلريا بين الماشية في محافظة القليوبية وقد تم فحص ١٤٣ من الحيوانات المشتبه في اصابتها بمرض التايلريا على مدار العام من ديسمبر ١٩٨٥ الى نوفمبر ١٩٨٦ • وقد وصفت الأعراض المميزة وسجلت نسبة الاصابة للتوزيع الموسمي وكذلك بالنسبة لأنواع الماشية المفحوصة • ومن ناحية أخرى تم تحديد التغيرات التي تحدث في الدم •

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**SOME STUDIES ON THEILERIA ANNULATA IN  
KALUBIA GOVERNORATE**  
(With 5 Tables & 2 Figs.)

By  
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(Received at 5/10/1987)

**SUMMARY**

A trial to study the prevalence of Theileria annulata among cattle in Kalubia Governorate was aimed. 143 suspected infected animals (113 cows & 30 buffaloes) with theileriosis were examined along the period from December 1985 to November 1986 clinically and parasitologically. The prevalence of T.annulata in relation to season, breed, age as well as the characteristic symptoms and blood changes were described.

**INTRODUCTION**

Cattle represented the greatest part of Egyptian animal wealth. Their products depended mainly on the general health condition, which impaired to a great extent by parasitic infection specially the blood parasites. Theileriosis is a haemoprotozoal infection responsible for high mortality among susceptible and imported stocks. Bovine theileriosis in Egypt is caused by Theileria annulata (NAGATY, 1947; NEITZ, 1954; ABD EL-AL, 1960; EZZAT, 1960; SAKLA, 1975; AHMED, 1980 and HASSANIEN, 1984). GARDASIS (1964) and KALIFA and KADHIM (1967) described the characteristic symptoms due to Theileria annulata among infected animals. They can be summarized as fever, anorexia, swelling of the superficial lymph nodes, emaciation with ocular discharge, dermatitis with skin lesion in different parts of body specially beak, rapid and shallow respiration.

In the present study, the prevalence of T.annulata in relation to season, breed, age as well as blood changes among suspected infected cattle and buffaloes in Kalubia Governorate are described.

**MATERIAL and METHODS**

143 suspected infected animals with theileriosis were examined during the period from December 1985 to November 1986. They included 113 cows (both native and imported) and 30 water buffaloes from localities in Kalubia Governorate (Kafer Shoker, Benha, Tukh, and Khanka). The shown symptoms were more or less identical to those described by GARDASIS (1964) and KALIFA and KADHIM (1967). They were mainly intermittent fever, enlargement

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of superficial lymph nodes, specially prescapular ones, weakness, anorexia, dermatitis with skin lesion specially back. Such animals were thoroughly examined for ticks and when present, ticks were collected and identified according to HOOGSTRAAL (1954). Thin and thick blood films were obtained directly from the ear vein. At the sametime smears from prescapular lymph nodes were prepared from each suspected diseased animals with the help of a thick needle. The blood and lymph films were quickly prepared and stained with Giemsa stain according to GIEMSA (1904). Then they were microscopically examined and the detected protozoan was identified according to LEVINE (1985).

The hoematological studies included erythrocytic count, leucocytic count, haemoglobin content and haematocrit value were carried out according to methods of KELLY (1979). Estimation of serum GOT and serum GPT were carried out according to REITMAN and FRANKEL (1957) and serum alkaline phosphatase was according to King and King method (1954).

**RESULTS**

Results are presented in tables (1-5) and photos (1 & 2).

**DISCUSSION**

Examination of blood films and lymph node smears of cases showing clinical symptoms of theileriosis revealed the presence of different stages of Theileria annulata (as shown in photo. 1&2) in 8 cases only (5,591%). The identification of the collected ticks revealed that they were Hyalomma anatolicum anatolicum. The relatively low incidence of Theileria annulata infection may be attributed to the low incidence of their vector Hyalomma anatolicum anatolicum. This result was similar to that of TADROS and NADA (1965) and AHMED (1980) who recorded that the incidence of Egyptian fever among cattle at Sharkia Governorate were 1.7% & 1.82% respectively. However, higher prevalence rates were reported at Assiut Governorate of 9.8% among buffaloes and 10% among cows. Much higher prevalence was noticed among cattle at Dommiata, Kafer El-Sheikh and Gharbia Governorates where 46.15%; 46.65% and 46.90% were found infected (HASSANIEN, 1984).

In Kalubia Governorate, the peak of theileriosis as shown in table (1) was at the autumn being 11.43%, followed by those examined during the summer (8.11%) and spring (2.86%). It is worth to mention that no animals showing theileriosis was noticed during the winter season. That result may be attributed to the absence of the tick vector (Hyalomma anatolicum anatolicum) during the winter season. In that respect SHARMA and GAUTAM (1977) recorded that T.annulata infection was more common in hot wet season, while HAN (1978) suggested the high peak of theileriosis was at autumn.

The prevalence of T.annulata infection among the different breeds of cattle demonstrated that it was 4.93% and 6.25% among native and foreign breeds of cattle respectively and 6.67% in buffaloes (Table 2). So the foreign breeds of cattle were more susceptible to T. annulata infection, Similar finding was recorded by ABD EL-AL (1960) and EZZAT (1960) who reported that the higher incidence of Theileria annulata infection was among the imported cows. Table (3) showed that, the prevalence of infection with Theileria annulata had increased among animals under 1 year (11.11%) then group 1-3 years old (6.06%) while no infection was recorded among group over 5 years old. Probably that may be attributed to age resistance

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or to previous infection and presence of a sort of immunity. Around this point ANANDAN and LALITHA (1984) reported that calves constituted about 14% of the affected animals with Theileria annulata in India.

Regarding the blood changes as in Table (4) the erythrocytic count, total leucocytic count and haemoglobin concentration were highly declined during the infection, as well as the packed cell volume showed highly significant reduction. This could be attributed to the reduction of R.B.Cs & W.B.Cs count. From Table (5), it was clear non significant changes in serum level of GOT & GPT and alkaline phosphatase.

Similar observations were recorded by SHARMA and GAUTAM (1977), LAL and SONI (1983) and KIM and SON (1984).

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Table (1)  
Seasonal prevalence of Theileria annulata  
infection among cattle and buffaloes in Kalubia Governorate

Season	Suspected diseased animal	No. of infected animals	% of infected animal.
Winter	36	0	0 %
Spring	35	1	2.86 %
Summer	37	3	8.11 %
Autumn	35	4	11.43 %
Total	143	8	7.08 %

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Table (2)

The prevalence of Theileria annulata infection among different breeds of cattle and buffaloes, in Kalubia Governorate

Breed	Suspected diseased animal	No. of infected animals	Infection %
Cows native breed	81	4	4.93 %
Cows foreign breed	32	2	6.25 %
Total Cows	113	6	5.31 %
Buffaloes	30	2	6.67 %
Total animals examined	143	8	5.59 %

Table (3)

The prevalence of Theileria annulata infection among cattle and buffaloes of different age in Kalubia Governorate

Age group	suspected diseased animal examined.	No. of infected animals	Infection %
Under 1 year	18	2	11.11 %
1-less than 3 years	66	4	6.06 %
3-less than 5 years	43	2	4.65 %
Over 5 years	16	0	0 %
Total	143	8	5.59 %

Table (4)  
Blood picture of apparently healthy and infected with theileriosis

Variable	Unite	Apperantly healthy cattle			Diseased cattle		
		Min.	Max.	Mean+S.E.	Min.	Max.	Mean+S.E.
Erythrocytic count.	Million per cumm	5.50	9.00	7.30 $\pm$ 0.598	4.21	6.01	5.07 $\pm$ 0.289*
Haemoglobin concentration.	gm per 100 ml	8.30	13.40	11.10 $\pm$ 0.754	6.80	9.50	8.12 $\pm$ 0.65*
Total leucocytic count.	Thousands per cumm	4.70	12.10	7.64 $\pm$ 1.663	4.10	5.30	4.75 $\pm$ 0.173*
Packed cell Volume (P.C.V.)	Vol. %	28.30	42.30	35.12 $\pm$ 1.579	16	30	24.33 $\pm$ 1.453**

Min. = Minimum.

\* Significant at 0.05

Max. = Maximum.

\*\* Significant at 0.01

S.E. = Standard error.

Table (5)  
The activity of some serum enzyme in apperantly healthy and cattle infected with Theileria annulate

Variabl	Unite	Apperantly healthy cattle			Cattle infected theileriosis		
		Min.	Max.	Mean + S.E.	Min.	Max	Mean + S.E.
Alkaline Phosphatas	K.A. Unite Per 100 ml.	10	40	24.28 $\pm$ 3.415	25	40	34 $\pm$ 2.61
S.G.O.T.	T.U. per liter	12	14	13.166 $\pm$ 0.281	7	20	13.80 $\pm$ 1.99
S.G.P.T.	I.U. per liter	7	27	11.666 $\pm$ 2.824	13	18	15.50 $\pm$ 1.66

Min. = Minimum.

Max. = Maximum

S.E. = Standard error

Best of luck with your future endeavors.

Sincerely,

[Signature]

[Name]

Director

[Address]

Executive

[Address]

Lead Analyst

[Address]

Lead Analyst

[Address]

Lead Analyst

[Address]

Lead Analyst

The quality of your work is a reflection of your ability and effort. We are confident that you will continue to excel in your new role.

Thank you for your contributions to our team. We wish you all the best in your future career.

[Signature]

[Name]

With best regards,

Director

[Address]

Executive

[Address]

Lead Analyst

[Address]

Lead Analyst

[Address]

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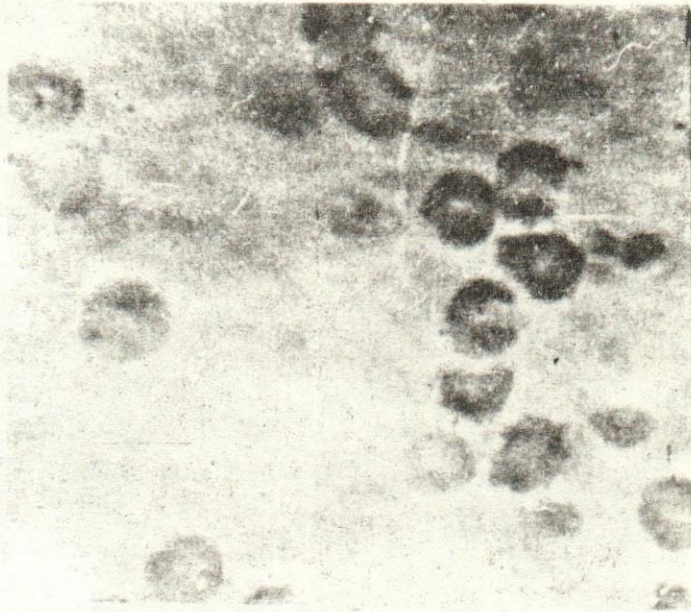


Fig. (1)  
Blood stage of *Theileria annulata*.

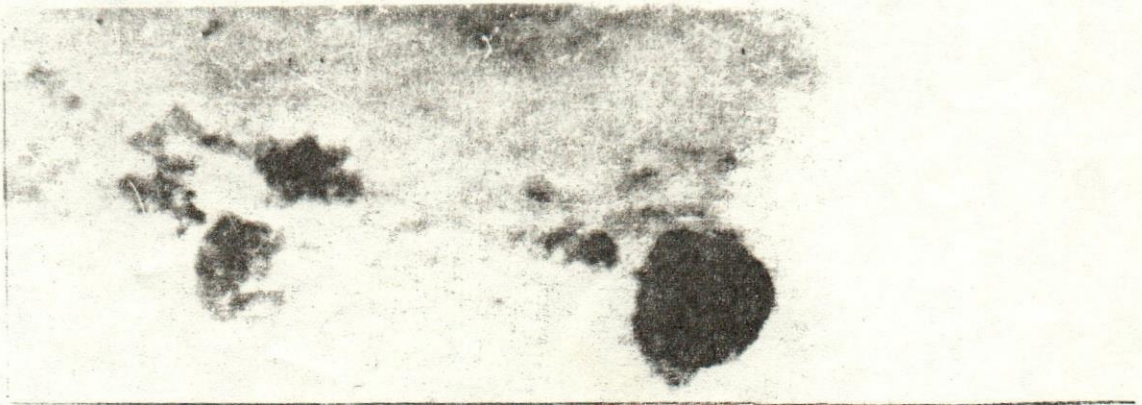
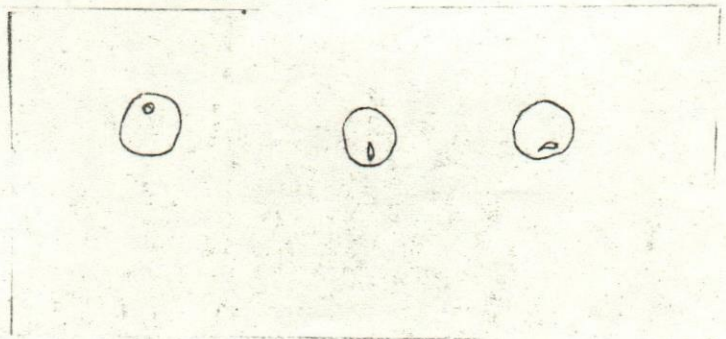


Fig. (2)  
Koch's blue bodies





1891  
Office of the Secretary



1891  
Office of the Secretary