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Comparative efficacy of different anthelmintic against experimental Haemonchosis in goat

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Abstract

A study was undertaken to determine the comparative efficacy of different anthelmintic against experimental Haemonchosis in goats. A total of 30 local goats irrespective of sex were randomly divided into 5 groups consisting of 6 animals in each group. The efficacy of drugs were assessed in terms of percent reduction in the number of mean EPG after treatment days and it could be concluded that fenbendazole (74.88%) and albendazole (76.62%) was resistant and drug closantel (95.78%) was effective against *Haemonchus contortus* infection.

Keywords: Haemonchosis, goat, experimental, anthelmintics

Introduction

Among gastrointestinal nematodes (GIN) *Haemonchus contortus* has been recognised as a parasite of considerable economic importance in small ruminants [1]. Treatment failure on account of anthelmintic resistance is a growing problem in warm and humid climate regions, especially in goats. Present study was undertaken to compare the efficacy of fenbendazole, albendazole and closantel in treating the goats experimentally infected with *Haemonchus contortus*.

Materials and Methods

Thirty goats, six months to three and half year old, of both sexes were selected for the present study. During the present experimental study the number of animals were 6 in each group A, B, C and D during the pre- infection and infection period but the number of animals were 5 during post treatment period in the same group A, B, C and D as one animal from each group was sacrificed after 25th day (the period of peak infection) to study the histopathological changes in the infected animals. On the other hand the number of animal in healthy control group E remained 6 throughout the study period till the end of the experiment.

Estimation of Eggs Per Gram (EPG) of faeces

Faecal samples were brought to the laboratory of the Department of Parasitology, College of Veterinary Science, Khanapara, Guwahati-22. They were subjected to estimation of EPG of faeces by Stoll's method [2] and the values of EPG were recorded.

Estimation of efficacy percentage

Efficacy of the drugs were expressed as percent reduction in the number of mean EPG after treatment days using the following formula [3].

$$\text{Percent efficacy} = \frac{\text{EPG before treatment} - \text{EPG after treatment}}{\text{EPG before treatment}} \times 100$$

Therapeutic trial

Treatment was given in different groups of animals with three different anthelmintics as follows:

Group A: Treated with Fenbendazole @ 7mg/ Kg body weight orally

Group B: Treated with Albendazole @ 5 mg/ Kg body weight orally

Group C: Treated with Closantel @ 10 mg/ Kg body weight orally

Group D: Kept as infected control.

Group E: Kept as healthy control.

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Results and Discussion

Data on comparative efficacy of the drugs are presented in Table-1. It was observed that in the goat treated with fenbendazole, the mean EPG was reduced overall by 70.81%. This observation is in agreement with that of other several workers [4, 5, 6].

The mean EPG count of goat, treated with albendazole was reduced by 71.97% (overall). Such types of efficacy of this drug against Haemonchosis has also been reported by others [1, 6, 7].

The treatment of goat with closantel reduced the mean EPG by 92.56% (overall) in the present study which corroborate

with those of others [5, 7, 8].

The mean \pm SE value of EPG of infected control group was examined throughout the study period and the observation has been presented in Table1. The mean \pm SE values of EPG of the faecal sample were increased gradually. Ameen *et al.* [9] also reported the same trends of EPG increased patterns during various post-infected weeks, infected with *H. contortus*.

The mean \pm SE values of non- infected, healthy control group were examined throughout the study period and the observation has been presented in Table1.

Table 1: Comparative efficacy of anthelmintics against experimental Haemonchosis in goats.

Group	Drug with dose & route of administration	Eggs per gram				Overall percent reduction
		BT	7 th Day	14 th Day	21 st day	
A	Fenbendazole @7 mg/kg body weight orally	2866.67 \pm 458.74	860.00 \pm 128.84	500.00 \pm 100.00	800.00 \pm 141.42	74.88
B	Albendazole @5 mg mg/kg body weight Orally	2366.67 \pm 174.48	640.00 \pm 81.24	360.00 \pm 107.70	660.00 \pm 97.98	76.62
C	Closantel 2 10 mg/kg body weight orally	3316.67 \pm 303.77	420.00 \pm 86.02	0.00 \pm 0.00	0.00 \pm 0.00	95.78
D	Infected control	2650 \pm 300.83	3840.00 \pm 174.93	4240 \pm 269.44	5020 \pm 330.76	
E	Healthy control	0.00	0.00	0.00	0.00	

*BT: Before treatment

From these observations, it was concluded that the drug closantel were highly effective against experimental Haemonchosis in goats in compare to drug fenbendazole and albendazole.

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