

COMPARATIVE EFFICACY OF VARIOUS DRUGS AGAINST GASTRODISCUS IN HORSES

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ABSTRACT

This study was conducted to work out the prevalence of *Gastrodiscus* infection in horses in Lahore district and to check the efficacy of oxfendazole, albendazole and ivermectin against *Gastrodiscus* infection in horses. Five hundred faecal samples were collected and subjected to Coprological examination. From the *Gastrodiscus* positive horses 28 animals were selected for this study and were divided into four groups (A, B, C and D) comprising 7 animals each. The animals of group A, B, and C were treated with albendazole (Farbenda 10%; Farvet) @ 1ml/13kg bwt, oxfendazole (Oxafax; GlaxoWellcome) @ 1ml/2.2kg bwt and ivermectin (Ivomec; Rhone Poulenc) @ 1ml/50kg bwt, respectively while the animals of group D were kept as untreated control. The prevalence of *Gastrodiscus* infection in horses was found to be 6%. The average efficacy of oxfendazole, albendazole and ivermectin was 56.2%, 69.47% and 9.5%, respectively. Hence oxfendazole and albendazole showed better results as compared to ivermectin.

Key words: *Gastrodiscus*; Oxfendazole; Albendazole; Ivermectin

INTRODUCTION

Parasitic diseases are one of the principle problems in the development of livestock industry. Factors like constant exposure to parasitic infections, variable climatic conditions and lack of knowledge on the part of livestock owners regarding parasitic diseases play an important role in the development of parasites and parasitic diseases (Durrani, 1991).

Like other animals horses' population is also infected by various kinds of parasites (Soulsby, 1982). Among these parasites the *Gastrodiscus* infection is very important which has been observed in Pakistan. The disease prevails all over the world, where there are water-logging areas and also by fodder transport, which also play an important role in the production of disease. As the fodder comes from different areas of Punjab, so the incidence of *Gastrodiscus* infection is increasing. The dynamics of helminthes population and its multi factorial regulations in all stages of development requires extensive worm control programme in the fight against parasites (Morris and Rick, 1980). The *Gastrodiscus* offer great economic importance world wide (Griffiths, 1974). Keeping in view the importance in equine in our community and the significant loss caused by *Gastrodiscus* infection in horses, the present study was designed to find out the prevalence of *Gastrodiscus* infection in horses and to compare the efficacy of oxfendazole, albendazole and ivermectin against *Gastrodiscus* infection in horses.

MATERIALS AND METHODS

Five hundred faecal samples of horses were collected from different areas of Lahore (Qurban Line, Harbanspura cattle colony, Shahdra Town) and were subjected to Coprological examination by direct smear method (Soulsby, 1982).

Collection of fecal samples: About 10-15 gms faeces were collected directly from rectum in small polythene bags, labeled and brought to medicine laboratory of Deptt. Of Clinical Medicine and Surgery, UVAS, Lahore for coprological examination.

Grouping of animals and treatment: From the *Gastrodiscus* positive horses, 28 horses were selected and divided into four groups i.e. A, B, C, and D each comprising 7 horses. The animals of group A, B, and C were treated with albendazole (Farbenda 10%; Farvet) @ 1ml/13kg bwt, oxfendazole (Oxafax; GlaxoWellcome) @ 1ml/2.2kg bwt and ivermectin (Ivomec; Rhone Poulenc) @ 1ml/50kg bwt, respectively while the animals of group D were kept as untreated control. The faecal samples were collected on day 0 (Pre-medication) and on day 3rd, 7th, and 14th (post medication).

Coprological examination: Coprological examination was performed by direct smear method and sedimentation method whereas egg per gram (EPG) was carried out by modified McMaster technique (Soulsby, 1982). Finally the percentage efficacy was calculated on the basis of reduction in EPG.

RESULTS AND DISCUSSION

The study was conducted on 500 horses to workout the prevalence of Gastrodiscus infection and efficacy of albendazole, oxfendazole and ivermectin in horses against Gastrodiscus. It was observed that the prevalence of Gastrodiscus infection in horses was 6%. It is in close agreement with the findings of Colton (1974) who conducted a study on gastrointestinal parasites of horses and reported 4% prevalence of Gastrodiscus infection in North-Eastern Nigeria. The slight difference might be due to climatic condition of the area. The findings of present study are also in close agreement with the findings of Von Maker (1989) who reported 5.8% prevalence of Gastrodiscus infection in horses in U.K.

The efficacy of oxfendazole was recorded as 51.36% on day 3rd, 58.18% on day 7th and 59.09% on day 14th. Post medication the average efficacy was 56.21% (Table 2). These findings are in a close agreement with the findings of Colglazier (1979) who carried out a research on horse and reported the efficacy of oxfendazole as 57.39%. The findings of the present study are also correlated with the findings of Jones (1980) who reported average efficacy of oxfendazole in donkeys as 60.58%. Brander (1982) concluded that the efficacy of oxfendazole in horses was 55.21%. These results are in accordance with the findings of present study. Lyones (1985) reported the efficacy of oxfendazole 59.23% which correlate with the findings of present work.

The efficacy of albendazole was 60.62%, 72.63% and 75.26% on days 3rd, 7th and 14th post medication, respectively. The average efficacy was recorded to be 69.47% (Table 2). These findings of present study correlates with the findings of Kilgore (1985) who reported the efficacy of albendazole in horses as 71.46%. These findings also correlate with the findings of Enigk (1974) who reported the efficacy of albendazole as 70.58%. The results of present study are also in close agreement with the findings of Ratnaparkhi *et al.* (1982), who observed the efficacy of albendazole against Gastrodiscus infection in horses as 68-74%. Our results are substantiated by the findings of Hennessy (1981) who conducted research on donkeys and the average efficacy of albendazole was 72.35%. Campbell (1982) also recorded the efficacy of albendazole in horses as 68.66%. These results are in close agreement with the findings of present study.

The efficacy of ivermectin was 17.5%, 7.5%, and 3.5% at day 3, 7 and 14, respectively. After medication the average efficacy was 9.5% which was lower than oxfendazole and albendazole (Table 2). Slocombe *et al.* (1979) carried out an experiment on horses and the efficacy of ivermectin was recorded as 8.88%. Our findings are in close agreement with the results of this study. Although ivermectin is a broad spectrum anthelmintic for ecto and endo-parasites and it

can work upto 97 to 100% against the nematodal as reported by Barrett *et al.*, (2004) It is an inhibitory action of ivermectin against nematode infection but against trematodes infection it cannot work well as mentioned above.

Table-1. Average EPG at different days.

Group	Days			
	0	3	7	14
A	220±80	107±72.3	92±70.1	90±68.4
B	190±78.3	75±65.8	52±65.2	47±62.8
C	200±79.8	165±77.5	185±78.8	193±79.1
D	160±77.1	168±77.8	159±76.0	162±77.3

Table- 2. Efficacy of Oxfendazole, Albendazole and Ivermectin at various days.

Drug	%age efficacy at day			Average Efficacy
	3rd	7th	14th	
Oxfendazole	51.36	58.18	59.09	56.21
Albendazole	60.52	72.63	75.26	69.47
Ivermectin	17.5	7.5	3.5	9.5

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