HAEMATOLOGY OF GASTROINTESTINAL HELMINTHS AFFECTED HORSES

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ABSTRACT

Present study was carried out to determine the incidence of gastrointestinal helminths in horses of Nagpur city. Among gastrointestinal helminths the order of helminth prevelence was *Strongylus* sp. (44.12%), *Anoplocephala* sp. (30.88%), *Parascaris equorum* (14.71%), mixed infection (*Strongylus* + *Parascaris equorum*) (5.88%) and lowest one was *Gastrodiscus* sp. (4.41%). Haematological study showed significant changes in haemoglobin, PCV, TEC and DLC in infected horses before and after treatment. Combination therapy proved to be highly effective against the gastrointestinal helminths.

KEY WORDS : Incidence, gastrointestinal, haematology, EPG, helminthes etc.

INTRODUCTION

Parasitic infestation in horses is the major clinical problem in most of the developed and under developed countries. Different antihelmintics are available in the market and are being used by owner haphazardly, which might have resulted in drug resistance. The documentation regarding the use of albendazole along with ivermectin as a combination therapy in horses is not available. The study was carried out in Nagpur city to determine different helminth infection, its severity at different age group, efficacy of combination (albendazole and ivermectin) therapy and effect of strongylosis on haematological values viz total erythrocyte count (TEC), packed cell volume (PCV) and haemoglobin (Hb).

MATERIALS AND METHODS

318 faecal samples of horses were collected and information regarding age, sex, housing status, history of deworming and management status was recorded. Blood samples were also collected before treatment and on 30th day (after treatment) and haemoglobin (Sahlis haemoglobinometer), packed cell volume (microhaematocrit method), total erythrocyte count (Neubaur's slide technique) and differential leukocyte count were done on same day as per method of Benjamin (2005).

A combination therapy comprised of albendazole (3gm) and ivermectin (100 mg) was used in horses @ 10mg/kg orally once and efficacy of this antihelmintic was evaluated by the examination of faecal samples by counting EPG on 0th day and subsequently on 3rd, 7th, 15th and 30th day of treatment for quantitative examination as per Stoll's technique described by Soulsby (1982).

RESULTS AND DISCUSSION

Faecal sample examination revealed that the overall percentage of endoparasites was found to be 68 (21.38%) . Out of which 38 (55.88%) were found positive in winter season and 30 (44.12%) in summer season indicating higher incidence in winter season. Statistically non significant effect was observed in different seasons and this variation may be due to tropical wet and dry climate of Nagpur city , with dry conditions prevailing for most of the year in which summer is extremely hot lasting March to June months of the year. This hot climate might be proving detrimental for helminths eggs or larvae, because of which the incidence of helminthiasis has been found less than winter season. Warm summer season conditions are most likely to be lethal for *Strongyle* larvae (Craig *et al.* 1983).The higher incidence was found in 3 to 6 year age (26.13%) followed by six years and above (20%) and lowest in 0 to 3 year age group (18.18%). Statistically there is significant

(P<0.01) difference in incidence of different age group animals. Among endoparasites the order of prevelence was found to harbor *Strongylus* sp., (44.12%) ,*Anoplocephala* sp. (30.88%), *Parascaris equorum* (14.71%), mixed infection (*Strongylus* sp. + *Parascaris equorum*) (5.88%) and lowest one was *Gastrodiscus* sp. (4.41%) and similar observations has been reported by Santos *et al.* (1992). Although horses reared in Nagpur city are stall fed, getting regular dewormer but high incidence of endoparasites found may be due to under dosing of antihelmintics. The treatment in the form of combination therapy was administered orally to 20 horses with EPG 300 to 3166 . It was found that the EPG was almost nil on 3rd day of treatment . Similar results were reported by Costa *et al.* (1995) who used combined antihelmintic therapy causes significant reduction in EPG count.

Effect of treatment on haematological paramenters

The Value of Hb, PCV and TEC during infection and before treatment were 8.39 g/dl, 24.20%, and $5.35x10^6$/µl which returned to normal level after treatment (Hb, 10.59 g/dl ; PCV, 31.24% and TEC $6.85x10^6$/µl). The decrease in hematological values may be due to the blood sucking nature of the endoparasites before treatment and comes to normal after treatment and are in agreement with the results of and Chaudhri *et al.* (1991), Alam Sher Sipra *et al.* (1999), Mahboob *et al.* (2008).

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