Buffalo Bulletin (March 1994) Vol.13 No.2

EFFICACY OF FENBENDAZOLE* AGAINST *NEOASCARIS VITULORUM* IN BUFFALO CALVES

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INTRODUCTION

Neoascariasis caused by *Neoascaris vitulorum* (Syn. *Toxocara vitulorum*) is a widely prevalent roundworm infection of buffalo and cattle, and 'neoascariosis' is single major factor for heavy mortality among buffalo calves (Bhatia and Chauhan, 1984). A number of anthelmintics, particularly piperazine salts, have been used with varying degree of efficacy against this infection (Tewari et al., 1966; Tripathi, 1967; Gautam et al., 1976 and Hariprasad et al., 1988). This article reports the efficacy of fenbendazole (methyl-5-(phenylthid)-2-benzimidazole carbonate) against *Neoascaris vitulorum* infection in calves.

MATERIALS AND METHODS

Twenty-nine farm born, 6-12-week-old buffalo calves belonging to either sex formed the subjects of the study. These animals were examined clinically, and their rectal faecal samples were collected for microscopic examination using standard sedimentation technique for the presence of ascaris eggs. The eggs per gram of faeces (EPG) was calculated by McMaster's method.

Infected buffalo calves were treated with fenbendazole (Panacur^R bolus 1.5 g) given orally @ 5 mg/kg b.w. Fecal examination was conducted at 7, 14, 21, 28 and 58 post-treatment days. Another dose of the drug at similar dose rate was given to the calves which showed eggs in their faeces at Day 7 after the first dose.

RESULTS AND DISCUSSION

The result of fenbendazole trial against *N. vitulorum* is presented in Table 1. Of the 29 buffalo calves, 19 (65.51%) had moderate (15) to severe (4) parasitic infections, with egg counts varying from 700 to 61,600 per gram of the faeces. Only two of the infected calves showed diarrhoea and inappetance.

Following the drug administration, adult worms were purged within 24-48 hr and there was marked reduction in the EPG count in all the treated animals. The EPG was zero on 7th day in all the 15 moderately infected calves. However, one of these calves showed recurrence of *Neoascaris* eggs on the 58th day, possibly due to reinfection.

In the severely affected calves, EPG was reduced considerably in all calves by Day 7, but only one calf was found virtually free from the infection. In the remaining three calves, the EPG dropped to zero during the post- treatment period of 14, 21, 28 and 58 days following administration of a second dose of the drug on Day 7.

Fenbendazole is a broad spectrum anthelmintic possessing both ovicidal and larvicidal activities (Duwel, 1979). The drug has been found 100% effective against *N. vitulorum* infection in buffalo calves at the dose rate of 7.5 - 10 mg/kg b.w. (Gautam et al., 1976; Sinha et al., 1985 and Swain et al., 1987). In the present study, Panacur^R bolus 1.5 g - a new formulation of fenbendazole-was found 100% effective in removing total worm burden from the moderately infected calves within 7 days even at a lower dose rate of 5 mg/kg b.w. given orally as single dose. In heavily infested calves (EPG 3,000), two doses of the drugs at an interval of seven days was required to achieve complete reduction of egg output.

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*PanacurR bolus 1.5 g., maketed by Hoescht (India) Ltd., contains Fenbendazole 1.5 g./bolus

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Table 1. Efficacy of fenbendazole (Panacur[R] bolus 1.5 g) against *N. vitulorum* in buffalo calves

Worm load	pre-treatment mean EPG	post treatment mean EPG (days)				
		7	14	21	28	58
Severe infection	20,475 (4)	4325 (3)*	00	00	00	00
Moderate infection	1,453 (15)	00	00	00	00	53.33(1)

* 2nd dose of the drug given. Figures in parentheses are the number of infected animals

ACKNOWLEDGEMENTS

The authors thank the Director, I.V.R.I. and Incharge, LPR (C&B) for providing facilities and M/S Hoescht India Ltd. for supplying the test drug.

REFERENCES

Bhatia, B.B. and Chauhan, P.P.S. (1984). Parasitic Diseases of Buffalo in India. Falcon Book, Cosmo Publ.

Duwel, D. (1979). Efficacy of Panacur (fenbendazole) against immature nematodes in cattle. Blauen Hefts fur den Tierarzt, 59: 459-64.

Gautam, O.P., Bansal, S.R. and Dey-Hazra, A. (1976). Field trials with fenbendazole against *Neoascaris vitulorum* in buffalo calves. Indian Vet. J., 53: 965-66.

Hariprasad, V., Gangadhara Rao, Y.V.B. and Rao, B.V.(1988). Field trial with morantal citrate (Banaminth II) against *Toxocara vitulorum* in calves. J. Vet. Parasitol., 2: 147-148.

Sinha, V.K., Srivastava, P.S., Verma, S.P. and Sinha, S.R.P. (1985). Efficacy of fenbendazole against gastrointestinal nematodes of cattle and buffaloes. Indian J.Anim. Hlth., 24: 55-57.

Swain, G.D., Misra, S.C. and Panda, D.N. (1987). Incidence and chemotherapy of *Neoascaris vitulorum* infection in Murrah buffalo calves at Bhubaneswar. Indian Vet. J., 64: 198-202.

Tewari, H.C., Kanchan, M.L. and Rao, B.V. (1966). Field trials with piperzine derivatives against ascariasis in pigs and calves. Indian Vet. J., 43: 162-164.

Tripathi, J.C. (1967). The efficacy of piperzine citrate (Antoban)against calf ascariasis. Indian Vet. J., 44: 82-84.

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bulk packed in HDPE bags showed absorption of moisture, but the rate of absorption was very slow even when stored at relatively high ambient temperature and humidity. Therefore, it is possible to store WMP under the above mentioned conditions of packing and storage for periods of up to eight months depending on the initial moisture content of the powder.