

AMPROLSOL, SULMET, COXYSOL - AK AND METROGYL IN THE TREATMENT OF CAPRINE COCCIDIOSIS*

Lucy Sabu and K.M. Pillai,
Department of Parasitology,
College of Veterinary and Animal Sciences, Trichur, Kerala

There has been a steady procession of chemical agents in the treatment of avian coccidiosis, but only a few drugs were tried in coccidiosis of goats and that too with varying results. Amprolsol was shown to be the most satisfactory drug in the treatment of natural clinical coccidiosis of goats at a dose rate of 100 mg. per kg. body weight for seven days (Horak *et al.*, 1969, Deb *et al.*, 1981). Sulmet at the recommended dose rate was found to be inferior to Burmidin in suppressing the output of oocysts in faeces (Misra and Mohapatra, 1972) and as an unsatisfactory drug (Deb *et al.* 1981). Nitrofurazone was reported effective in preventing mortality in goats (Tarlatis *et al.* 1955) at the rate of 10 mg. per kg. body weight for seven days. Reshetnyak *et al.* (1970) have reported highly satisfactory therapeutic control of outbreaks of rabbit coccidiosis with metronidazole at the rate of 40 mg. Per kg. body weight for seven days.

The present paper describes the results of treatment of natural coccidiosis in goats using Amprolsol, Sulmet, Coxysol-AK and MetrogyL.

Materials and Methods

The animals for the treatment trials were selected from those maintained at the University Goat Farm, Mannuthy and presented at Veterinary Hospital, Mannuthy on the basis of clinical signs and examination of faeces for the presence of oocysts. They had mixed infections with two or more species of *Eimeria* namely: *E. arloingi*, *E. christenseni*, *E. apsheronica*, *E. alijeji*, *E. caprina*, *E. ninakohlyakimova* and *E. jolchijevi*. The more prevalent species were *E. arloingi* and *E. christenseni*. The oocysts per gram (OPG) of individual faecal samples was determined and animals with an oocyst count of 25,000 and above per gram were utilised for the study. Since the faecal samples were of varying consistency, the correction factor proposed by Vereruyse (1982) viz., factor one for normal pellets, 1.5 for soft formed faeces, two for soft faeces, 2.5 for diarrhoeic faeces and three for watery faeces, was used for estimating the number of oocysts.

* Part of the thesis submitted by the senior author to Keral Agricultural University for the award of M.V.Sc.

Thirty four kids were selected and divided into four groups. Group I was treated with Amprolium Hydrochloride (Amprolsol - Merck Sharp and Dhome), Group II with sodium sulpha dimethyl pyrimidine (Sulmet - Cyanamid), Group III with a combination of nitrofurazone and furazolidone (Coxysol - Ak - Alved) and the last group with metronidazole (Metrogyl - Unique Pharmaceuticals). The animals were weighed and the drugs were administered orally at the following dose rates.

Amprolsol : 100 mg. per kg. body weight for five days

Sulmet : 30 ml. per 23 kg. weight on the first day followed by half the dose on subsequent four days

Coxysol-AK : 40 mg. per kg. body weight for five days

Metrogyl : 20 mg. per kg. body weight for five days

The faecal samples of the treated animals were collected on the seventh day and the oocysts per gram of faeces was determined. Reduction of oocyst count to less than 10 per cent of the original count was considered as cured.

Results

Results of the treatment trial is shown in Table 1. All the animals treated with Amprolsol showed reduction of oocyst counts to less than 10 per cent of the original. The clinical symptoms in all cases were found to disappear by fourth day.

Table 1 Comparative efficacy of Amprolsol, Sulmet, Coxysol-AK and Metrogyl against caprine coccidiosis based on reduction in oocyst per gram of faeces

Drug used	No. of animals used	No. of animals cured	Comparative efficacy (%)
Amprolsol	8	8	100.0
Sulmet	8	7	87.5
Coxysol-AK	8	1	12.5
Metrogyl	10	3	30.0

In seven of the sulmet treated animals the oocysts per gram was reduced to less than ten per cent of the original count while in one case the reduction was only to 15.1 per cent. The clinical signs were found to disappear by fifth day of medication. It was also observed that the oocysts discharged by sulmet treated animals did not sporulate.

In Coxysol-AK treated animals there was reduction in OPG to less than 10 per cent, in only one animal. In three cases there was decrease in the severity of diarrhoea and other clinical symptoms, while in other cases the symptoms were found to persist.

In the case of animals treated with Metrogyl the results were varying. In three cases the reduction of OPG was less than 10 per cent of the original count while in four cases there was increase in oocyst count.

Comparative efficacy of Amparolsol, Sulmet, Coxysol-AK and Metrogyl in the treatment of natural clinical coccidiosis in kids is also furnished in Table I.

Discussion

It is generally agreed that Amprolsol is the most effective drug for caprine coccidiosis at a dose rate of 100 mg. per kg. body weight (Deb *et al.*, 1981 Hork *et al.*, 1969 and Swarup *et al.*, 1982). During the present study all the animals treated with Amprolsol recovered uneventfully from the disease and the oocyst count became less than 10 per cent of original count, five animals having only less than one per cent. Prasad *et al.* (1981) could not get good results with Amprolsol and this may possibly be due to the fact that they used the drug only at half of the prescribed dose rate.

Though several sulpha drugs have been tried against caprine coccidiosis, sulmet has been found to be used only by Misra and Mohapatra (1972) and Deb *et al.* (1981). The latter authors reported sulmet as an unsatisfactory drug while the former claimed them to be satisfactory, reducing the oocyst count to less than five per cent. During the present study sulmet gave 87.5% efficacy. An observation which has not been reported by any of the previous authors was that the

cocysts passed by the sulmet treated animals did not sporulate. This has significance, in checking the dissemination of infection to other animals.

Coxysol-AK was found to be unsatisfactory since only one of the eight treated animals got cured of the infection. Parai (1985) found Bifuranc (Nitrofurazone and furzolidone) ineffective against caprine coccidiosis while Tarlatzis *et al.* (1985) reported that Nitrofurazones were effective in checking the morbidity. Chakraborti *et al.* (1977) could get complete recovery of the ailing kids with Neftin (Nitrofurazone).

Metronidazole at a dose rate of 40 mg/kg could effectively control outbreaks of coccidiosis in rabbits (Reshetnyak, *et al.*, 1970). However, in goats metronidazole at a dose rate of 20 mg. per kg. body weight had no effect in checking the infection as in four of the treated animals, the oocyst counts were found to increase. Metronidazole at higher dosage rates would probably be more effective in the treatment of coccidiosis.

Summary

Amprolsol, Sulmet, Coxysol-AK and Metrogyl were, tried against natural clinical coccidiosis in kids. Amprolsol at a dose rate of 100 mg. per kg. body weight was 100 per cent effective. Sulmet gave 87.5 per cent efficacy at a dose rate of 30 ml. per 23 kg. body weight while, Coxysol-Ak and Metrogyl were found unsatisfactory in the treatment of caprine coccidiosis.

Acknowledgement

The authors are thankful to the Dean, College of Veterinary and Animal Sciences for granting permission to publish this paper.

References

- Chakraborti, A., Parhi, N.K., Gangopadhyay, R.M. and Nayak, B.C. (1977). Studies on spontaneous cases of Eimeriasis in Black Bengal kids. *Indian J. Anim. Hlth.* **16**(1): 57-58
- Deb. A.R., Sinha, B.N., Sahai, B.N. and Anasari, M.Z. (1981). Efficacy of Amprolium, Sulphamezathine and sulmet against coccidiosis in goats. *Indian Vet. J.* **58**(9): 689-691
- Horak, I.G., Raymund, S.M. and Louw, J.P. (1969). The use of Amprolium in the treatment of coccidiosis in domestic ruminants. *J.S. Afr. Vet. Med. Ass.*, **40**: 293-299 Abst. Vet. Bull (1970) 40, 1046
- Misra. S.C. and Mohapatra, G.S. (1972). Coccidian infection in goats and chemotherapeutic effect of Burmidin and Sulmet. *Orrissa Vet. J.* **7** (1) : 9-14
- Parai, T.P. (1985). Therapeutic management of coccidiosis in Pashmina kids and goats. *Indian Vet J.*, **62**(1): 72-76
- Prasad. R.S., Chabra, M.B. and Singh, R.P. (1981). Clinical coccidiosis in kids associated with *Eimeria christensen*. *Ind. Vet. J.*, **58**: 330-332
- Reshetnyak, V.Z., Bartenev, V.S. and Rubanova (1970). Trichopol (metronidazole) an effective drug against coccidiosis in Rabbit. *Veterinariia.* **3**: 75 Abst. Vet. Bull (1970), **40**: 5540
- Swarup, D., Parai, T.P. and Murai Lal (1982). Therapeutic efficacy of Amprolium Hydrochloride (Amprosol MSP) against coccidiosis in Pashmina kids. *Indian vet. J.* **59**: 69-70
- Tarlatzis, C., Penetsos, A. and Dragonas, P. (1955). Furacin in the treatment of ovine and caprine coccidiosis. *J.Am.Vet.Med.Ass.* **126**: 391-392
- Vereruyse, J. (1982). The coccidia of sheep and goats in Senegal. *Vet. Parasitol*: **10**(4): 297-306