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Clinico-Therapeutic management of coccidiosis in calf: A case report

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Abstract
Coccidiosis is one of the economically important disease-causing heavy morbidity and mortality in young animals caused by a single-celled parasite called coccidia. A month-old non-descript cow calf was presented with symptoms of hemorrhagic diarrhoea, anorexia, dullness and dehydration. By detecting coccidial oocysts on coprological examination, the case was diagnosed as winter coccidiosis. The calf was successfully treated with Sulphadiazine and Trimethoprim @ 30 mg/kg b.wt coupled with supportive therapy. An uneventful recovery occurred following 3 days of treatment and the faecal samples showed no evidence of oocysts.

Keywords: Winter coccidiosis, calf, diarrhoea, *Eimeria*, sulphadiazine

Introduction
Coccidiosis is an economically important disease-causing heavy morbidity and mortality in young calves caused by the single-celled parasite coccidia. Adult animals serve as a source of infection for young ones, which are more susceptible to infection (Abebe *et al.*, 2008) [1]. Ingestion of sporulated oocysts transmits the disease. The majority of cases of coccidiosis are seen in the winter months in India, but it may occur throughout the year. When coccidiosis occurs in the winter, it is called winter coccidiosis (Chakrabarti and Jha, 2016) [2]. It is characterized clinically by haemorrhagic diarrhoea, dehydration, anorexia and increased susceptibility to other illnesses. Clinical symptoms vary between *Eimeria* species, with *Eimeria zuernii* and *Eimeria bovis* being the most pathogenic (Radostits *et al.*, 1994) [7]. The present article reports the successful management of winter coccidiosis in a cow calf.

Case History and Signalment
A month-old non-descript cow calf was presented during winter month to the Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, Jabalpur, NDVSU, Jabalpur (M.P.) with a history of anorexia, dullness and bloody diarrhoea for 2 days. Clinical examination revealed an elevated heart rate of 78/minute, a respiration rate of 28/minute, a subnormal rectal temperature of 97.5 ^{o}F, a pink conjunctival mucous membrane and moderate dehydration. The perineum and tail were soiled with blood-stained faeces.

Diagnosis
For confirmatory diagnosis of disease faecal samples were collected directly from the rectum using gloves and processed by direct smear examination technique for parasitic ova as per the procedure described by Soulsby, 1986 [8]. Faecal sample examination confirmed the presence of unsporulated oocysts of *Eimeria* species. On the basis of history, clinical findings, age and faecal sample analysis the case was diagnosed as winter coccidiosis.
The treatment was instituted for a period of 5 days with Sulphadiazine and Trimethoprim @ 30 mg/kg body weight I/M to surmount protozoal load and alleviate signs of diarrhoea. Supportive therapy included parenteral fluid therapy with Dextrose Normal Saline @ 20 ml/kg body weight and Ringers Lactate @ 15 ml/kg body weight intravenously to correct the dehydration and electrolyte imbalances.

Fig 1: Calf affected with *Eimeria* spp.

Fig 2: Haematochezia

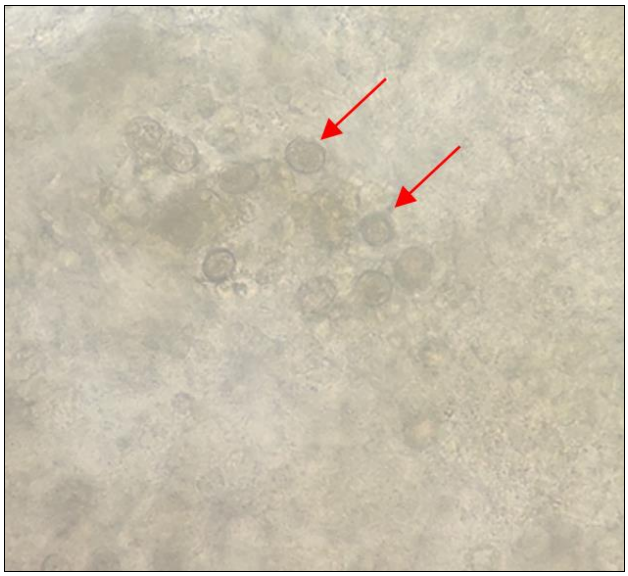

Fig 3: Oocysts identified by direct microscopic faecal examination

Fig 4: Complete remission of clinical signs after therapy

Treatment

Results and Discussion

An uneventful recovery occurred after 3 days of treatment and no oocysts were detected in the faeces. Calf coccidiosis is highly prevalent during the first 3 months of life, possibly due to overcrowded housing and easy contact with adult animals. Das *et al.* (2015) [3] also observed a higher prevalence in younger animals than in adults and opined that immature immunity might play a substantial role in the development of clinical infections in young animals. Successful recovery in the present study confirmed that calf coccidiosis could be effectively managed with potentiated Sulfonamides. By inhibiting the formation and reduction of coccidial dihydro folic acid, di-amino pyrimidine potentiated sulfonamide blocks DNA synthesis and eventually causes an anticoccidial effect. This is in accordance with the findings of other workers (Ghoke *et al.*, 2009, Hazarika and Das, 2017, Kumar *et al.*, 2018 and Verma *et al.*, 2018) [4, 5, 6, 9].

Conclusion

Though coccidiosis is a self-limiting disease it causes heavy morbidity and mortality in calves in field conditions. The current observation thus emphasizes that prompt diagnosis and timely intervention with suitable coccidiostats coupled with supportive therapy can substantially improve survival rates of calves at the field level.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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