OCCURRENCE AND PATHOLOGY OF COLIBACILLOSIS IN INTESTINE OF CATTLE (*BOS INDICUS*)

Manisha Mehra, G. Singh and H. Dadhich
Department of Veterinary Pathology, College of Veterinary and Animal Science
Rajasthan University of Veterinary and Animal Sciences, Bikaner- 334 001, Rajasthan, India

Received Revised: 14.02.2016
Accepted: 13.04.2016

ABSTRACT

Colibacillosis continues to remain one of the most important disease entities of cattle/cattle calves. The present study was undertaken to elucidate occurrence and pathology of colibacillosis in cattle. This study revealed that occurrence of colibacillosis in intestine was 41.02 per cent in cattle in Rajasthan state. The gross changes in intestine were congestion and haemorrhages in intestine. Histopathological changes revealed haemorrhagic enteritis, hyperplasia of goblet cells, degeneration and desquamation of lining epithelium of villi in intestine.

***Key words*:** Cattle, *E. coli*, intestine and histopathology

Introduction

In India cattle population is an integral part of the agriculture. The cattle biodiversity in India constitutes 33 well defined breeds of cattle. India is highest milk producing country of the world and total milk contribution of cows is 40% in total milk production of 90.7 million metric tones. Cattle is one of the key animal in agriculture economy contributing substantially to the gross national products by the way of good quality milk, export quality leather, physical power etc. Colibacillosis is one of the most important bacterial disease and is a major cause of morbidity and mortality in ruminant, particularly during first few weeks of their life. Prevalence of colibacillosis has increased in recent years due to several reasons, which include size of herd, improper feeding, poor livestock rearing system and increased population density. *E. coli* infection is worldwide problem in new born animals and serious outbreaks occur mostly in first fortnight of life (Acres, 1983).

Materials and Methods

For the present study, a total of 345 cattle (mainly 0-5 years of age) irrespective of sex and breeds were examined. Out of these 78 cattle/calves showing frank macroscopical lesions were used for further study.

For this, tissue samples of intestine and liver were collected aseptically and confirmed by streaking on MacConkey agar petriplates eosine and methelylene blue. For histopathological examination, All samples were promptly preserved in 10% formal saline and processing of tissues were carried out in paraffin embedding using acetone and benzene technique. The tissue sections of 4-6 micron thickness were cut and stained with haematoxylin and eosin staining method as a routine.

Results and Discussion

Colibacilli incidence in this study of intestine was 41.02%. Grossly, the affected intestines revealed haemorrhagic foci and patechial haemorrhages. Yellowish coloured material present in lumen of intestine at few places which is appear as mucinous exudates. All these findings were also reported by Singh and Singh (1983) and Janke *et al.* (1989). On microscopic examination, intestine showed histopathological alteration which included petechial haemorrhages, congestion and hyperplasia of goblet cells (Fig 1). It also showed marked infiltration of neutrophils, macrophages and lymphocytes in mucosa and submucosa, desquamation of the epithelial cells which covers upper part of villi. These findings were also observed by Wales *et al.* (2001) and Sharma *et al.* (2003).

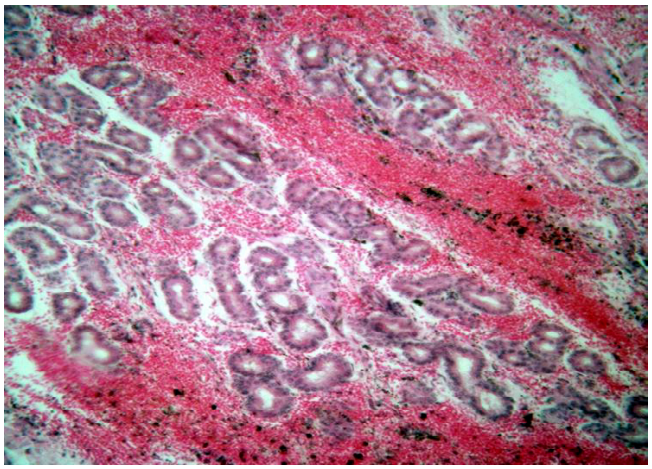

Fig. 1: Microphotograph of intestine showing marked haemorrhages in submucosa and marked mononuclear infiltration (H&E, 100X).

References

Acres, S. D. (1983) *Dairy Sciences*. **68:** 229.
Janke, B. H. *et al.* (1989) *J. Vet. Diagn*. **1:** 6-11.
Sharma, V.K. *et al.* (2003) *Indian J. Vet. Pathol.* **27:** 50-51.
Singh, G. K. and Singh, N.P. (1983) *Indian J. Vet. Pathol.* **7:** 31-34.
Wales, A. D. *et al.* (2001b) *J. Med. Microbiol*. **50:** 752-758.