

A subsequent experiment was conducted to investigate the cellular changes induced by MCW (Immunoboost K™) in this challenge model. Histopathological examination of intestinal walls was conducted 16 hours post treatment (36 hours after challenge) and compared to untreated controls. Three distinct differences were observed in the small intestinal tract sections from the MCW (Immunoboost K™) treated calves:

1. There was a marked reduction in colonization on the microvilli of both the jejunum and ileum.

2. Significantly less of edema fluid was observed in the submucosal epithelium of the lamina propria.
3. Great incidence of degranulated eosinophils in the lamina propria was found.

Despite these histological data, the specific function activities occurring at the subcellular level are not clear. Clinical data of the present study suggest that non-specific immunostimulation of calves with MCW (Immunoboost K™) at the onset of colibacillosis protects the calves against long term morbidity and death.

Abstract

Intussusception in cattle: 336 cases (1964-1993)

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A hospital-based, case-control epidemiologic study, using medical records of cattle admitted to 17 veterinary medical teaching hospitals in North America and a retrospective case series involving 57 cattle with intussusception admitted to 3 of these teaching hospitals, were used. The objectives were to evaluate selected risk factors and to describe clinical and laboratory findings, surgical management, and postoperative outcome for cattle with intussusception. Intussusception was detected predominantly in the distal third of the jejunum, although ileocolic, cecocolic, and colocolic intussusception also were reported. Sex and season were risk factors that were not significantly associated with the development of intussusception, whereas calves < 2 months old were at greater risk ($P < 0.001$) of developing small in-

testinal intussusception than older cattle. Affected cattle were mildly hyponatremic, hypochloremic, hypocalcemic, azotemic, and hyperglycemic. Various methods were used for surgical correction, with most cattle undergoing right flank laparotomy with the cow in a standing position, followed by intestinal resection and end-to-end anastomosis. Overall survival rate (20/57; 35%) and post-operative survival rate (20/46; 43%) for cattle with intussusception were much lower than previously reported and similar to those for horses undergoing small intestinal resection and anastomosis.

Key words: bovine species; epidemiology; intussusception; surgery.