

The Effects on Abomasal Emptying Rate of Erythromycin and Bethanechol in Healthy, Premature and Diarrheic Calves

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Abstract : In this study, we aim to define the effects of erythromycin and bethanechol which are prokinetic agents, on the value of abomasal discharge in healthy, diarrhea and premature calves. In the work, 5 healthy calves, 12 diarrheic calves and 12 premature calves, amounting to a total of 29 calves. In healthy calves work; the same 5 calves were used for controlled, erythromycin and bethanechol studies (there was a 48-hour waiting period between each work). In diarrheic calves work; 12 diarrheic calves were used during the study (4 of them for control group, 4 of them bethanechol group and last 4 calves erythromycin group). In premature calves works; 12 premature calves were used during the study (4 of them for control group, 4 of them bethanechol group and last 4 calves erythromycin group). 10 mg/kg IM dose of erythromycin were applied to each erythromycin group, 0,07 mg/kg IM dose of bethanechol were applied on bethanechol group. No drugs were applied to the control group and substitution milk was given to all calves. 50 mg/kg acetaminophen and 25 gram/L glucose have been added into the substitution milk to evaluate the speed of gastrointestinal motility with the test results of absorptions of acetaminophen and glucose. The blood samples have been taken before substitution milk application and 30, 60, 90, 120, 180, 240 and 300 minutes after substitution milk application. Respiratory rates and number of heartbeats were also recorded during the test time. No changes were observed in the number of heartbeats, respiratory rates and general conditions for all groups after drug application. It is observed that, the feces of some calves became slightly watery and viscous and premature calves generally defecated after 180 minutes. When Cmax, Tmax and AUC values of acetaminophen and glucose are compared with control group's after applying erythromycin on the calves in the premature group, we obtain higher Cmax ($P < 0,05$), shorter Tmax and greater AUC ($P > 0,05$) values. In conclusion, according to clinical and laboratory findings, it may be stated that the application of 10 mg/kg dose of erythromycin IM has provided faster abomasal emptying in premature calves.

Keywords : abomasal emptying, bethanechol, calf, erythromycin

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