Risk Factors Associated With Gastrointestinal Dysfunction in Horses Undergoing Elective Procedures Under General Anesthesia

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Gastrointestinal dysfunction occurs commonly after elective anesthesia. Identification of risk factors may allow implementation of preventative measures to reduce the prevalence of colic after elective anesthetic procedures. Authors’ address: Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO 80523; e-mail: Brad.Nelson@colostate.edu. *Corresponding and presenting author. © 2013 AAEP.

1. Introduction
The purpose of this retrospective, case series study was to examine risk factors associated with post-anesthetic colic (PAC) or gastrointestinal dysfunction for horses undergoing elective surgical or diagnostic procedures under general anesthesia.

2. Materials and Methods
Medical records were collected from adult horses undergoing general anesthesia from January 1, 2008, to December 31, 2010, through the use of a retrospective cohort design. Potential risk factors were examined by means of univariable logistic regression with a limit of a $P < 0.25$. Through backward elimination, the final multivariate model was created to determine variables significantly associated with gastrointestinal dysfunction.

3. Results
Colic or delayed fecal output was reported in 36 of 416 (8.7%) horses undergoing general anesthesia in the study period. In the final multivariable model, horse breed ($P = 0.05$), peripheral blood lactate ($P = 0.02$), right lateral recumbency during general anesthesia ($P = 0.04$), post-anesthetic rectal temperature ($P = 0.03$), and hours to first passage of manure ($P < 0.01$) were statistically significant between horses that exhibited colic compared with those that did not exhibit colic. Arabians were more likely to have colic compared with other horse breeds (4/13, 30.8%). Horses that exhibited gastrointestinal dysfunction passed manure later than those that did not exhibit colic (7.2 ± 0.8 hours and 5.4 ± 0.2 hours, respectively). As blood lactate increased at the end of anesthesia, the odds of colic also increased (odds ratio, 1.4; 95% confidence interval, 1.04–1.83, $P = 0.02$).

4. Conclusions
This study demonstrated the prevalence of gastrointestinal dysfunction in horses undergoing elective general anesthetic procedures in our hospital population. Arabian horses, increasing blood lactate levels, and delayed passage of feces were signifi-
cantly associated with an increased risk of gastrointestinal dysfunction. These results will help identify horses undergoing anesthesia that are at increased risk for colic and may allow implementation of preventative measures.

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