Prevalence of and Risk Factors Associated with *Salmonella* Shedding Among Equids Presenting to a Veterinary Teaching Hospital for Colic (2013–2018)

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The prevalence of *Salmonella* shedding in this colic population was low. Certain predictors such as development of a fever or reflux in hospitalized colic cases were associated with *Salmonella* shedding and may help the clinician to promptly identify horses likely to shed. Authors’ addresses: Department of Surgical and Radiological Sciences (Kilcoyne, Dechant), Department of Medicine and Epidemiology (Magdesian, Spier), School of Veterinary Medicine, Department of Medicine and Epidemiology (Guerra), Academic Affairs (Kass), University of California-Davis, Davis, CA 95616; e-mail: ikilcoyne@ucdavis.edu. *Corresponding and presenting author. © 2021 AAEP.

1. Introduction

Colic has been previously associated with shedding of *Salmonella*. The purpose of this study was to determine the prevalence of *Salmonella* shedding in a colic population and identify factors associated with *Salmonella* shedding.

2. Materials and Methods

This was a retrospective case-control study. For each colic horse that was positive for *Salmonella* (n = 56), two colic cases (n = 112) that tested negative were enrolled as controls. Associations between variables and *Salmonella* shedding were identified using logistic regression. Univariate and multivariate models were developed pertaining to 1) presenting clinicopathological data and 2) clinical variables that developed during hospitalization.

3. Results

Of 1,917 horses presenting with colic, 1,585 had at least 1 sample submitted for *Salmonella* testing. Of these, 56 were positive for *Salmonella* yielding a prevalence of 3.5%. Horses shedding *Salmonella* were more likely to present with a history of fever (p = 0.01), increased lactate (p = 0.007) and/or...
neutropenia ($p = 0.02$). Hospitalized horses shedding *Salmonella* were more likely to be febrile ($p = 0.01$) and 10 times more likely to develop reflux ($p = 0.01$) compared to controls.

4. Discussion

The prevalence of *Salmonella* shedding in this colic population was low, presumably due to increased biosecurity measures. More *Salmonella* positive horses developed reflux versus diarrhea while in the hospital. These findings may warrant revision of relying on diarrhea as one of the primary signs of infection and revising the criteria for infectious disease control protocols.

Acknowledgments

Declaration of Ethics

The Authors have adhered to the Principles of Veterinary Medical Ethics of the AVMA.

Conflict of Interests

The Authors have no conflicts of interest.