

Survey of Serum Amyloid A and Pathogen Frequency in Recently Captured Feral Donkeys

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Wild donkeys from remote desert environments carry viruses and bacteria that may cause disease in donkeys but do not pose a significant threat to horse populations. Further research on changes in pathogen presence after donkeys are commingled with domestic equids is warranted. Authors' addresses: International Animal Welfare Training Institute (Jerele, Davis), Animal Science (Brizgys, McLean), Department of Medicine and Epidemiology (Mapes, Pusterla), School of Veterinary Medicine, University of California-Davis, Davis, CA 95616; Faculty of Veterinary Sciences, Genetics Department, University of Córdoba, Córdoba, Spain 14071 (Gonzalez). e-mail: acmclean@ucdavis.edu. *Corresponding and presenting author. © 2019 AAEP.

1. Introduction

Recent removal of feral donkeys from public land has increased concerns for disease transmission to other equids. The relocation process to new environments and introduction to other equids may cause outbreaks. The objective of this study was to determine the frequency of respiratory pathogens and measure inflammatory blood biomarkers (serum amyloid A) in recently captured donkeys.

2. Materials and Methods

Whole blood and nasal secretion samples were collected from 85 donkeys (Death Valley National Park); 24 were retested after 60 days in a long-term holding facility that were commingled with donkeys from multiple locations. Whole blood was tested for serum amyloid A (SAA) on site with a commercially available kit (StableLab, Sligo, Ireland). Quantitative real-time PCR (qPCR) was conducted on nasal

secretions tested for *Streptococcus equi* subspecies *equi* and *zooepidemicus*, equine influenza A, equine rhinitis A and B viruses, and herpesviruses (asinine herpesvirus 2 [AHV-2], AHV-3, AHV-5, equine herpesvirus 1 [EHV-1], and EHV-4).

3. Results

Positive correlations were found for pathogen DNA and SAA, age, and body condition score. SAA level was correlated with age, with foals having a higher SAA, but not with body condition score, presence of nasal discharge, or behavior. Seventy donkeys were positive for asinine herpesviruses and *Streptococcus zooepidemicus*.

4. Discussion

Additional research is needed to provide more information on domestic management systems and value of SAA in gauging the health of donkeys.

Research Abstract—for more information, contact the corresponding author

NOTES

Acknowledgments

Declaration of Ethics

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

Conflict of Interest

The Authors have no conflicts of interest.