

Infectious Upper Respiratory Disease Status of Wild Horses and Burros in the United States of America

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Summary

Infectious upper respiratory disease (IURD) associated with *Streptococcus* Spp. infection was investigated in populations of wild horses and burros (WHBs) in the USA with the goal of evaluating disease source and spread. Data and samples were collected from WHBs with signs of IURD at gathers and on US Bureau of Land Management facilities over one year. Outbreaks of IURD occurred in WHBs on facilities in several states. In many cases, infection with *S. zooepidemicus*, rather than *S. equi*, was associated with classical signs of IURD.

Introduction & Objectives

Infectious upper respiratory disease (IURD), especially that caused by *Streptococcus equi* infection (strangles), was identified by the United States Bureau of Land Management (BLM) Wild Horse and Burro Program (WHBP) as an important disease problem in wild horses and burros (WHBs) housed in BLM facilities throughout the USA. A collaborative field study was conducted by the Colorado State University Animal Population Health Institute (CSU APHI) and the BLM WHBP, with the goal of evaluating the source and spread of the disease in WHBs.

Objectives were to (1) evaluate clinical IURD in WHBs on Herd Management Areas (HMAs) by examining WHBs immediately after gathering from the range, (2) estimate attack rates during IURD outbreaks on BLM facilities, (3) determine the Streptococcal species associated with clinical IURD in WHBs, and (4) evaluate factors possibly associated with the occurrence and spread of the disease.

Materials & Methods

Data and samples were primarily collected by BLM staff or United States Department of Agriculture: Animal and Plant Health Inspection Service: Veterinary Services personnel during gathers and by private veterinarians on BLM facilities. Samples consisted of a swab of nasal secretions, abscess exudate, or both. All samples were cultured at the CSU Veterinary Diagnostic Laboratory (VDL) and all β -haemolytic Streptococcal isolates were speciated using standard methods.

During the study period, data from each gather were recorded using a standardised data collection form (Gather Data Sheets/GDS). Data included number of WHBs gathered and removed, weather conditions, and health status of domestic horses contacting the WHBs. During gathers, all WHBs were examined for clinical signs of IURD. Samples were collected from those gathered WHBs with clinical IURD and basic data (e.g. signalment, HMA) were recorded. Samples and data were also collected from WHBs with clinical IURD on BLM facilities. Data recorded for each sampled WHB on facilities included signalment, HMA of origin, previous and current housing locations and dates, shipping vendor, and medical and vaccination history. Saddle and other horses contacting WHBs during gathers and on facilities were also sampled, and data including medical and vaccination history of these horses were recorded.

Results

Twenty gathers taking place between 1 September 2001 and 16 September 2002 completed GDSs. Clinical signs of IURD were noted in 0.62% (36/5,839) of WHBs examined during these 20 gathers. *Streptococcus zooepidemicus* was cultured from 4 of the 27 nasal swab samples collected from the 36 WHBs with signs of IURD, *S. equisimilis* was cultured from one, and *S. equi* was cultured from zero. No samples from the four WHBs with submandibular abscesses at gathers were sent to the VDL for testing (4/5,839, prevalence = 0.06%).

Samples were collected from 131 WHBs with clinical signs of IURD on 11 BLM facilities during the study period. Overall, *S. equi* was isolated from 14% (18/131) of these samples. Estimated attack rates for all IURD outbreaks on facilities ranged from 0.3% to 100%. There was no difference in mean interval from arrival at the facility to clinical IURD for those WHBs arriving directly from a gather compared to those arriving from another BLM facility.

Of the 136 samples obtained from the 103 saddle and other horses contacting WHBs at 19 different gathers and facilities, *S. zooepidemicus* was isolated from six, *S. equisimilis* from one, and *S. equi* from zero. None of these contact horses were reported to have been exhibiting signs of IURD at the time of sampling.

Discussion

Streptococcus zooepidemicus was cultured from a higher than expected percentage of samples from WHBs with IURD at gathers and on facilities, and was associated with more severe clinical signs of IURD than is generally expected. Clinical presentation of *S. zooepidemicus* infection in this population may have been exacerbated by other stressors such as gathering and shipping, or by primary viral infections, although gathering itself did not appear to predispose WHBs to clinical IURD. As was expected, facilities on which WHBs from multiple facilities were commonly admixed reported more outbreaks of IURD than those receiving WHBs directly from HMAs. Handling and management practices that are implemented at gathers and on facilities based on the nature of WHBs tended to hinder the collection of appropriate data and samples.