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Preface: Getting Prepared **xiii**

Brett A. Sponseller

***Rhodococcus equi*–What is New This Decade?** **1**

Macarena G. Sanz

Foals become infected shortly after birth; most develop subclinical pneumonia and 20% to 30% develop clinical pneumonia that requires treatment. It is now well established that the combination of screening programs based on thoracic ultrasonography and treatment of subclinical foals with antimicrobials has led to the development of resistant *Rhodococcus equi* strains. Thus, targeted treatment programs are needed. Administration of R equi-specific hyperimmune plasma shortly after birth is beneficial as foals develop less severe pneumonia but does not seem to prevent infection. This article provides a summary of clinically relevant research published during this past decade.

An Overview of Equine Enteric Clostridial Diseases **15**

Deepa Ashwarya Kuttappan, Shankumar Mooyottu, and Brett A. Sponseller

The understanding of the pathogenesis of equine enteric clostridial organisms is an active, evolving field. Advances will improve our knowledge both from the animal welfare and human health perspectives. The zoonotic nature of this group of diseases makes them relevant in the age of One health, as a significant amount of close human–equine interactions occurs for business and pleasure. Economic and welfare reasons prompt a better understanding of enteric clostridial pathogenesis, treatment, and control of the infection in horses and ongoing efforts are needed to advance clinical outcomes.

***Salmonella* in Horses** **25**

Brandy A. Burgess

Managing Salmonella in equine populations can be challenging due to the epidemiology of this disease. In particular, due to the range of clinical outcomes, the occurrence of subclinical infections, and intermittent shedding. This greatly affects the ability to detect shedding and can lead to widespread environmental contamination and transmission. The veterinary profession can reduce the risk to stablemates and their caretakers, while meeting their ethical obligation, by appropriately managing these risks within animal populations and environments.

Potomac Horse Fever **37**

Sandra D. Taylor

Potomac horse fever (PHF) is a common cause of equine colitis in endemic areas. Until recently, the only causative agent known to cause PHF was

Neorickettsia risticii. However, N. findlayensis has been isolated from affected horses. Horses typically become infected upon ingestion of Neorickettsia spp.-infected trematodes within aquatic insects. The most common clinical signs include diarrhea, fever, anorexia, lethargy and colic. The diagnostic test of choice for PHF is PCR of blood and feces. Tetracyclines remain an effective treatment. Supportive care, including fluid therapy, colloid administration, NSAID and anti-endotoxin medication, and digital cryotherapy, is also necessary in some cases.

Equine Rotaviral Diarrhea **47**

Jamie J. Kopper

Equine rotavirus is one of the most common causes of infectious diarrhea in foals. Although the infection itself is self-limiting, the resulting diarrhea is due to multiple mechanisms and can be severe, requiring supportive care including fluid and electrolyte support. Prompt diagnosis is important for treatment and biosecurity decisions and can be achieved by several means. Prevention, while imperfect, currently relies on vaccination of pregnant mares before parturition, ingestion of adequate colostrum from vaccinated mares and biosecurity measures.

Equine Coronaviruses **55**

Nicola Pusterla

Coronaviruses are a group of related RNA viruses that cause diseases in mammals and birds. In equids, equine coronavirus has been associated with diarrhea in foals and lethargy, fever, anorexia, and occasional gastrointestinal signs in adult horses. Although horses seem to be susceptible to the human severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) based on the high homology to the ACE-2 receptor, they seem to be incidental hosts because of occasional SARS-CoV-2 spillover from humans. However, until more clinical and seroepidemiological data are available, it remains important to monitor equids for possible transmission from humans with clinical or asymptomatic COVID-19.

Infectious Causes of Equine Placentitis and Abortion **73**

Rebecca E. Ruby and Jennifer G. Janes

A variety of infectious agents including viral, bacterial, and fungal organisms can cause equine abortion and placentitis. Knowledge of normal anatomy and the common pattern distribution of different infectious agents will assist the practitioner in evaluating the fetus and/or placenta, collecting appropriate samples for further testing, and in some cases, forming a presumptive diagnosis. In all cases, it is recommended to confirm the diagnosis with molecular, serologic, or microbiological testing. If a causative agent can be identified, then appropriate biosecurity and vaccination measures can be instituted on the farm.

Hendra Virus: An Update on Diagnosis, Vaccination, and Biosecurity Protocols for Horses 89

Xueli Wang, Jessica C. Wise, and Allison J. Stewart

Hendra virus (HeV) emerged as a zoonotic pathogen in the 1990s, causing low morbidity but high mortality in humans and horses. Pteropid bats are the natural reservoir of HeV and other important zoonotic viruses such as Nipah and Ebola viruses. Equivac HeV, manufactured by Zoetis (Parkville, Victoria, Australia), is the only commercially available vaccine for horses. There is no commercial vaccine for humans. The epidemiology, clinical features, pathology, diagnosis, management, and prevention of HeV will be reviewed.

Eastern, Western, and Venezuelan Equine Encephalitis and West Nile Viruses: Clinical and Public Health Considerations 99

Daniela Luethy

The continued recognition and emergence of alphavirus and flavivirus diseases is a growing veterinary and public health concern. As the global environment continues to change, mosquito-borne diseases will continue to evolve and expand. Continued development of readily available vaccines for the prevention of these diseases in humans and animals is essential to controlling epizootics of these diseases. Further research into effective antiviral treatments is also sorely needed. This article describes equine encephalitis viruses with a focus on clinical and public health considerations.

Streptococcus equi* Subspecies *equi 115

Ashley G. Boyle

Video content accompanies this article at http://www.vetequine.theclinics.com.

Strangles, caused by the bacteria *Streptococcus equi* subsp *equi*, is a highly contagious disease of equids classically characterized by a high fever and enlarged lymph nodes of the head. Diagnostic sampling depends on the stage of the disease. The goal of treating strangles is to control transmission and to eliminate infection while providing future host immunity. Daily temperature checking and isolation of febrile horses is the key to controlling outbreaks. Eradication of this disease will not be possible until S equi carriers are eliminated from the equine population.

Equine Granulocytic Anaplasmosis 133

Andrea Oliver, Francisco O. Conrado, and Rose Nolen-Walston

Equine granulocytic anaplasmosis is a clinically significant and common disease of equids that has a broader prevalence than was once thought. The most common clinical signs include high fever and edema, with mild to mderate thrombocytopenia and lymphopenia typically noted on complete blood count. Subclinical cases are reported and many are self-limiting. Rare clinical presentations include neurologic disease, vasculitis, dysphagia, rhabdomyolysis, or bicavitary effusion. Most cases resolve rapidly with appropriate antimicrobial intervention.

Vesicular Stomatitis Virus 147

Angela M. Pelzel-McCluskey

Vesicular stomatitis (VS) is a vector-borne livestock disease caused by vesicular stomatitis New Jersey virus (VSNJV) or vesicular stomatitis Indiana virus (VSIV). The disease circulates endemically in northern South America, Central America, and Mexico and only occasionally causes outbreaks in the United States. Over the past 20 years, VS outbreaks in the southwestern and Rocky Mountain regions occurred periodically with incursion years followed by virus overwintering and subsequent expansion outbreak years. The regulatory response by animal health officials prevents the spread of disease by animals with lesions and manages trade impacts. Recent US outbreaks highlight potential climate change impacts on insect vectors or other transmission-related variables.