Important & Emerging Zoonotic Diseases

In most cases, zoonotic viral human pathogens are not easily transmitted from person to person; most humans are dead-end hosts. Measles and influenza are among the most important exceptions. In recent years, illnesses caused by several new pathogens have caught public awareness. These include avian influenza and pandemic influenza, severe acute respiratory syndrome (SARS), flavivirus infection (West Nile virus, Japanese encephalitis virus, St. Louis encephalitis virus, and Murray Valley encephalitis virus), viral hemorrhagic fever, Ebola virus infection, monkey pox, and slow viruses and prion diseases. Avian influenza A usually infects the intestinal tract of wild birds but can also cause disease in domestic birds, pigs, horses, and humans. Person-to-person transmission is rare, and this virus is the subject of much study and media attention. SARS gained worldwide attention in 2003 when the first major epidemic was recorded. It is believed that it was first transmitted from animals to humans via civets; however, recent evidence suggests that horseshoe bats may be the reservoir. Flavivirus infection, dengue fever, and yellow fever have seasonal patterns because they are spread by mosquitoes. Three clinical syndromes have been associated with these infections: fever with arthralgia and rash, viral hemorrhagic fever, and neurologic signs. Viruses causing viral hemorrhagic fever are of particular importance because they are associated with acute contagious epidemics: yellow fever, dengue fever, Lassa fever, Rift Valley fever, and Ebola-related fevers.

Over the past decade, the number of zoonotic and vector-borne viral diseases has increased worldwide; birds are of particular importance. Early detection and diagnosis of viral zoonoses are important with respect to treatment, containment, and public health awareness.

COMMENTARY: Using avian influenza, SARS, and West Nile viruses as examples, Heeney concisely describes the complex interactions of humans, domestic animals, free-ranging wild animals, and ecosystem variables that affect the control of zoonotic infectious diseases. Because nearly three fourths of all the emerging and reemerging infectious diseases are zoonoses, veterinary medicine must return to the forefront of public health. This will be facilitated by expansion of public health training opportunities for graduate veterinarians and combined DVM-MPH degree programs in our veterinary medical colleges.—Christopher W. Olsen, DVM, PhD, Professor of Public Health


Predicting Prognosis in Inflammatory Bowel Disease

In this retrospective study, the records of 48 dogs diagnosed with lymphocytic-plasmacytic enteritis (LPE)—a type of inflammatory bowel disease (IBD)—between April 2001 and March 2005 were reviewed to identify possible prognostic factors associated with survival. The dogs were divided into 2 groups, survivors (n = 32) and nonsurvivors (n = 16). Comparisons were made between the groups for signalment, clinical signs, laboratory findings, and response to treatment. Significant differences were found between the groups with regard to the presence of anorexia and severe weight loss (≥30%); incidence of anorexia and weight loss was higher among nonsurvivors. Significant differences also existed with regard to packed cell volume, which was decreased in nonsurvivors (mean value, 35.0% ± 9.6%) compared with survivors (mean value, 42.5% ± 8.6%), and total protein, which was higher in nonsurvivors (mean value, 4.5 ± 1.7 g/dl) compared with survivors (mean value, 3.7 ± 0.9 g/dl). Shiba Inus were overrepresented in the nonsurvivor group, although further studies analyzing larger numbers of cases would be needed to clarify the breed disposition with regard to prognosis. Initial response to treatment was strongly associated with poor prognosis: most nonsurvivors did not respond to immunosuppressive doses of corticosteroids and showed no symptomatic improvement within 2 weeks of the beginning of treatment. On the other hand, most survivors responded to treatment within the first 2 weeks, even if anorexia and severe weight loss were present at the time of diagnosis. The authors concluded that these parameters might be used as prognostic factors for dogs with LPE, although further prospective studies would be needed to confirm their clinical usefulness.

COMMENTARY: While several causes have been proposed, the cause of LPE in dogs is still not clear. Clinical signs can vary from mild to severe, and the disease is often not so much cured as it is controlled. One retrospective study published in 2004 reported that only 26% of dogs with IBD were in remission at the time of follow-up, and 13% were euthanized due to refractory clinical signs. Therefore, studies such as this one might prove useful in determining which dogs are at greatest risk for poor prognosis and help guide clinicians when discussing expectations for clinical outcome with owners.—Jennifer L. Schori, VMD