Preventing *T foetus* Transmission

FOCUS: Feline Medicine

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Feline intestinal tritrichomoniasis, caused by transmission of *Tritrichomonas foetus* via the fecal–oral route, includes such signs as diarrhea and perianal dermatitis and can lead to incontinence. Examination of intestinal biopsies has shown that *T foetus* can also cause inflammatory bowel disease. The current study examined the viability of *T foetus* in various media. Researchers exposed the parasites to water, cat urine, dry cat food, canned cat food, and cat litter for 5 to 180 minutes and then tested survival by culture analysis. The parasites survived for up to 30 minutes in water or dry cat food and for 180 minutes in cat urine and canned cat food. No survival was measured after exposure to cat litter.

Commentary

This study illustrated the potential transmission of *T foetus* via contaminated water, urine, and cat food. In multiple cat residences, especially in homes with a new kitten, frequent water bowl cleaning and separation of litter box areas from food and water should be encouraged to prevent transmission of the parasite between animals. This study also has public health relevance, as 3 cases of infection were reported in immunocompromised cat owners. Though zoonotic transmission is rare, individuals with reduced immune function should take extra care to protect themselves from *T foetus* infection.—*Carly Jordan, PhD*

Source

Survival of a feline isolate of *Tritrichomonas foetus* in water, cat urine, cat food, and cat litter. Rosypal AC, Ripley A, Stockdale Walden HD, et al. ***VET PARASITOL*** 185:279-281, 2012.

Rabbit Virus = Human Concern

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Rabbit hemorrhagic disease virus (RHDV), a calicivirus, is characterized by hemorrhagic lesions, mainly in the liver and lungs. Like the human norovirus, RHDV binds to histo-blood group antigens (HBGAs), which are expressed on epithelial surfaces and serve as attachment factors (ligands). Because phylogenetic conservation of receptors can be a major risk for cross-species transmission, a study analyzed the ability of RHDV strains to recognize human HBGAs. Binding capacity of 6 RHDV strains against human saliva samples from ABH secretors, which secrete antigens in body fluids according to their blood groups (A, B, or O), was tested. Human saliva samples were recognized by 5 of 6 RHDV strains. Only the RHDV antigenic variant G6 did not show binding to saliva. Strains G1 and G2 showed preferential binding to saliva from B over O secretors; A secretors were poorly recognized. The G3 strain showed better recognition of A secretor saliva. The G4 and G5 strains showed preference for A secretors over B and O secretors, indicating a shift in specificity toward recognition of the A antigen. No RHDV strains recognized nonsecretor saliva. To determine if human epithelial cells were recognized by RHDV, binding of the G3 strain to human tissue sections was assessed using tracheal, lung, and gastroduodenal junction samples. Binding to epithelial cells of stomach or trachea of secretors was noted, but not to those of nonsecretors. The findings indicated that attachment factors for RHDV are present on human cells.

From the Editor

Commentary

This study emphasized another compelling reason for collaborative medicine and recognition of the pathogen plasticity. Of particular concern was the recognition of RHDV attachment factors on human epithelial cells, chiefly those that might mimic the point of viral entry. This suggested that RHDV, a disease of extraordinarily high mortality, could affect humans if its host range is more expansive than originally thought. Implications for widespread epidemics and microbial bioterrorism are staggering.—*Indu Mani, DVM, DSc*

Source

Shared human/rabbit ligands for rabbit hemorrhagic disease virus. Nyström K, Le Moullac-Vaidye B, Ruvoën-Clouet N, Le Pendu J. ***EMERG INFECT DIS*** 18:518-519, 2012.

Leptospirosis: Global Awareness

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In humans, leptospirosis causes acute febrile illness and can be difficult to distinguish from dengue. Approximately 5%-10% of humans with leptospirosis are affected severely; 5%-15% of these patients die. During 2000-2009, approximately 15-100 human leptospirosis cases were reported annually in Puerto Rico. In January 2010, the CDC initiated enhanced surveillance in Puerto Rico. Fatal cases of acute febrile illnesses were investigated and tissue samples were tested for dengue virus and other pathogens, including *Leptospira* spp. Twenty laboratory-confirmed cases and 5 suspected fatal cases of leptospirosis were identified, suggesting that 60%-70% of fatal cases of leptospirosis were not reported. This may reflect case under-recognition, underreporting, or both.

Physicians and veterinarians were interviewed to assess their knowledge of the clinical presentation and treatment of leptospirosis, as well as reporting requirements. Over 95% of interviewees could describe signs and symptoms, risk factors, and appropriate treatments for leptospirosis. Both groups indicated that diagnostic services were not timely or available. Veterinarians were willing to participate in a reporting system if available. The Puerto Rico Department of Health and the CDC agreed to: (1) implement a new surveillance system recording suspected cases of leptospirosis in humans and animals; (2) develop diagnostic capacity for leptospirosis; (3) promote use of FDA-approved rapid tests in the field; and (4) revise case definitions for reporting.

Commentary

Leptospirosis is considered an emerging disease in dogs in the United States. However, it is not a reportable disease in either humans or dogs in the United States, so its prevalence remains unknown. Currently, diagnosis is based on acute and convalescent phase antibody titers by the microscopic agglutination test. All practitioners should be aware of the varied clinical syndromes associated with *Leptospira* spp infection.—*Patricia Thomblison, DVM, MS*

Source

Notes from the field: Investigation of leptospirosis underreporting—Puerto Rico, 2010. Rivera B, Bower WA, Guerra M, et al. *MMWR* 61:421, 2012.

FOR MORE…

Share handouts **Leptospirosis: Protecting Your Patients & Staff** with your team (**cliniciansbrief.com/protect-against-leptospirosis**) and **So Your Dog Has Leptospirosis** with your client (**cliniciansbrief.com/so-your-dog-has-leptospirosis**).

Research Note

Keeping *Toxoplasma* in Check

Though effective treatments for toxoplasmosis are available, current drugs come with adverse effects. In this report, researchers demonstrated the ability of enrofloxacin to control *Toxoplasma gondii* infection in tissue culture and infected mice. Enrofloxacin, an antibiotic typically used to treat bacterial infections, targets DNA gyrase, an enzyme present in bacteria and apicomplexan parasites, but not in most mammals. Thus, it represents an attractive treatment option, as adverse effects to the host are minimal. Further studies are needed to determine the efficacy and appropriate doses of enrofloxacin in other species.

Source

Enrofloxacin is able to control *Toxoplasma gondii* infection in both in vitro and in vivo experimental models. Barbosa BF, Gomes AO, Ferro EAV, et al. ***VET PARASITOL*** 187:44-52, 2012.

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