

Reducing risk of zoonotic parasitic diseases — a shared responsibility

Roundtable: veterinarians, physicians jointly responsible

Leading researchers in veterinary parasitology, physicians who treat parasitic zoonoses, and legal experts joined together in a roundtable discussion on zoonotic parasitic diseases, April 10 in Atlanta. The group initiated dialogue and opened communication channels that they hope will ultimately serve to protect the health of people and pets. The Bayer Corporation sponsored the event.

According to Dr. Peter Schantz (official in epidemiology, zoonotic disease, and parasitology for the CDC), zoonotic parasitic infections of clinical importance develop infrequently in human beings but are tragic when they do. Because their prevalence is minor compared with AIDS and other human illnesses, CDC budgets for research and development have been reduced. Collaborative efforts between the private sector and public agencies are, therefore, especially needed at this time. This roundtable discussion represented a first step toward the goal of cooperation and communication among veterinary and human medicine, private companies such as Bayer, and public agencies such as the CDC.

In his opening remarks, Dr. Schantz described the status of zoonotic parasitic disease in the United States. Each year, approximately 10,000 children are infected with ascarids from dogs and cats, and it is estimated that about 750 of them lose their vision as a result of these infections. Surveys have shown that most pet owners are aware only of rabies as a zoonotic risk, not of the potential danger of parasites. Family physicians are also sometimes unaware of parasitic problems. Compounding this is the failure of most veterinarians to educate their clients about such risks. According to a recent survey of practitioners, only about a third routinely discuss zoonotic parasites, including methods of reducing risks, with their clients.

Increasing the general risk of



Participants in the Zoonotic Parasitic Diseases Roundtable: front row—Drs. Bob Arther, Candace Allert, Adele Hendrix, Vic Khoshoo, Carol Glaser, Kevin Kazacos, and Leonard Marcus; back row—Drs. C. P. Wilkinson, Dwight Bowman, Peter Schantz, Byron Blagburn, and Ed Roberson.

zoonotic parasites is the fact that deworming practices by veterinarians may be less intensive than necessary to minimize the risk of transmission to human beings, according to the roundtable experts. They agreed that deworming pups for roundworms and hookworms should begin at 2 weeks of age (before eggs can be detected in feces) and that kittens should be dewormed at 3 weeks of age. Anthelmintics should be repeated every 2 weeks until the pets are at least 12 weeks old. Veterinarians typically recommend deworming at 6 to 8 weeks of age. In a 1989 survey, only a third of practitioners dewormed pets at 4 weeks or younger, and fewer than 50 percent of veterinarians recommended prophylactic deworming of any kind.

The group addressed the problems associated with diagnosis of gastrointestinal helminths, which include false-negative results from improper sampling (eg, of previously treated animals), improper procedures, testing during the prepatent period, and intermittent or low levels of egg shedding. The consensus was that procedure protocol should be followed rigorously and that routine preventive deworming (without a definitive diagnosis) may be the safest and most practical option, especially with young animals.

Dr. Schantz pointed out that, along with the classic larva migrans

syndromes associated with *Toxocara* and *Ancylostoma*, emerging agents of larva migrans in human beings include *Baylisascaris*, *Strongyloides*, and *Gnathostoma*. Although the great majority of such nematode infections in human beings are asymptomatic, clinical cases may involve cutaneous tracks, damage to vision, neurologic disease, and even death. According to Dr. Kevin Kazacos (professor of veterinary parasitology, Purdue University), *Baylisascaris* is of special concern because the larvae increase in size as they migrate and have a strong predilection for the central nervous system, where they may cause considerable damage and prove fatal. Patent *Baylisascaris* infections have been documented in at least 12 dogs; raccoons are the preferred host. Dr. Kazacos feels that practitioners may be seeing this parasite in practice but not recognizing it because the eggs superficially resemble *Toxocara* eggs. However, *Baylisascaris* eggs are smaller, and their surface is finely granular, compared with the pitted surface of *Toxocara* eggs. Dr. Kazacos further characterized *Baylisascaris* as the most common cause of clinical larva migrans in animals. The parasite has, in fact, been recognized as a frequent cause of mortality in animals having contact with raccoon fecal contamination.

Although litigation has been brought against US veterinarians for

negligence resulting in human harm from zoonotic parasites, all such suits have been dropped or settled out of court. Therefore, no true US case law or precedents exist in this area. Charges of negligence and defective product were recently brought against a pet store that sold a pup without adequate deworming or record keeping. The young girl who purchased the pup developed visual problems and lost sight in one eye as the result of *Toxocara* infection. The court ruled on the issue of whether a pup is a "product," and, thus, whether the girl could sue the pet store on this claim. The parties agreed to settle for more than \$1.5 million.

Dwight Bowman, PhD (professor of veterinary parasitology, Cornell University) stated that veterinarians may be held liable, criminally as well as civilly, for failure to report, diagnose, treat, or warn clients regarding zoonotic disease. The American Association of Veterinary Parasitologists recently released a position paper in the form of a CDC brochure stating that deworming should begin at 2 weeks of age. Bayer is helping distribute the brochure to small animal practitioners. Veterinarians are not obligated legally to follow a position paper, but it may be the safest course, Dr. Bowman said.

According to Dr. Adele Hendrix (attorney and small animal practitioner, Woodstock, Ga), veterinary liability for human zoonotic disease can be reduced by a narrowly drawn consent-and-release form, which should be signed by clients who refuse diagnosis or treatment for potential zoonotic diseases. Such forms also serve to emphasize the seriousness of the risk and the need for proper treatment. Dr. Hendrix also advocates the use of written materials such as brochures or computer-generated handouts to inform clients about zoonotic risks and measures they should take to minimize their exposure. Client education measures should be

documented in each pet's health record. If a pet owner is known to be immunocompromised by HIV, chemotherapy, or corticosteroid treatment, the standards of veterinary responsibility for proper pet care and client education could be even more strictly upheld.

C. P. Wilkinson, MD (chairman of ophthalmology, Greater Baltimore Medical Center, and associate professor, Johns Hopkins University) stated that *Toxocara canis* is a significant cause of legal blindness in the pediatric population that he sees. Intraocular *Toxocara* is responsible for three syndromes affecting the vitreous and retina. *Toxocara* serum titers are often used to help pinpoint the diagnosis. However, many children are seropositive at 1:8, and this low level of seropositivity is not diagnostic, making interpretation difficult. A syndrome referred to as diffuse unilateral subacute neuroretinitis (DUSN) is a multifactorial disease that is increasingly recognized by ophthalmologists as another zoonotic cause of severe visual loss. At least two organisms, *Ancylostoma caninum* and *Baylisascaris procyonis*, have been implicated as causing this syndrome.

Vic Khoshoo, MD, PhD (a pediatric gastroenterologist in New Orleans) recently published, with Dr. Schantz and others, reports of adult *Ancylostoma caninum* in the intestines of children. This phenomenon, which was first reported in Australia, documents that the human intestine can be colonized by adult *Ancylostoma caninum*. Because physicians may not immediately include parasites in their differential diagnoses of abdominal distress, such cases often undergo extensive workups with no satisfactory diagnosis being reached. Dr. Khoshoo believes that forums such as this roundtable will help increase physician awareness and raise the index of suspicion for parasitic problems in human patients.

Dr. Carol Glaser and Dr. Leonard Marcus agreed that their veterinary training in parasitology and zoonoses was far more extensive than the coursework on these topics that they completed in medical school. Dr. Glaser, a pediatrician and veterinarian involved in zoonotic diseases, is chief of sexually transmitted disease control for the California Department of Health Services, San Francisco. Dr. Marcus is a veterinarian/physician consultant in zoonotic, tropical, and parasitic diseases in Newton, Mass.

Medical students, Drs. Glaser and Marcus noted, simply have more critical and more common diseases they must be taught in the four years allotted to medical training for general practitioners. When faced with an obvious pet-associated risk, physicians often advise getting rid of pets altogether, a solution that may not be in the patient's best interest. The roundtable participants concluded that veterinarians should communicate with physicians regarding zoonoses and should educate pet owners directly about health risks. Dr. Marcus suggested that patient education brochures for physicians' offices would be very useful for pediatricians and family practitioners and would be an excellent vehicle for preventive care.

The roundtable panel concluded that veterinarians share the responsibility with physicians for protecting the public health. In addition, veterinarians bear the obligations of educating pet owners about the health risks from animals, and of diagnosing and treating parasites in pets. Through public education and the joint efforts of veterinarians and physicians, the risk for disease transmission of zoonotic parasites can be reduced. ♣

This report was written by Dr. Candace Allert, a veterinarian who is a technical writer and animal health consultant in Overland Park, Kan.