



Collaborative Clinical Research Faire

Western University of Health Sciences,
College of Veterinary Medicine

Session Abstracts

February 4th, 2012

11:00 a.m. – 4:00 p.m.

Health Education Center; Classrooms E & F



Western University of Health Sciences, College of Veterinary Medicine's Inaugural "Collaborative Clinical Research Faire" proudly received Gold Title Sponsorship from **Pfizer Animal Health** and Silver Letter Sponsorship from **Boehringer Ingelheim Vetmedica (BIVI)**.



Morning Sessions:

Small Animal Morning Session

Classroom E

11:00 – 11:25 a.m.

Polymerase Chain Reaction (PCR) versus serology? Which test is best for diagnosing vector-borne disease in dogs?

Linda Kidd - DVM, PhD, DACVIM

Serologic and PCR panels allow clinicians to test for multiple organisms in patients with clinical signs of vector borne disease. Recently, very comprehensive and sensitive PCR panels have become readily available. When choosing a diagnostic test, it is important for the clinician to remember that the sensitivity and specificity of both PCR and serology depends on the pathophysiology of the infecting organism. The timing of presentation in relation to when the dog was infected, whether the organism causes acute and/or chronic disease and when or if the organism circulates in peripheral blood dictate the utility of these diagnostic tests. In this session we will review the pathophysiology of common causes of vector-borne disease in dogs as it relates to diagnostic testing. We will also present data from two recent collaborative studies with Western University's College of Veterinary Medicine affiliate teaching hospitals that investigate how clinicians commonly test for vector borne disease, and the prevalence of vector borne disease in clinically ill Southern California dogs.

Small Animal Morning Session

Classroom E

11:30 – 11:55 p.m.

Canine Leptospirosis In Southern California: Myth Or Reality?

Pedro Paulo V.P. Diniz - DVM, PhD

In the last decades, leptospirosis has been described as an (re-)emerging disease in dogs in the U.S. Conflicting information about diagnosis, epidemiology, treatment, and prevention of canine leptospirosis motivated the American College of Veterinary Internal Medicine to publish a consensus statement in January 2011. This lecture aims to discuss important new trends about *Leptospira* spp. epidemiology, as well as the advances and limitations of the diagnostic methods and prevention strategies, in light of the most recently data published in the literature. Opportunity to participate in an epidemiological study about *Leptospira* spp. in dogs in SoCal will be presented and discussed with the audience.

Small Animal Morning Session

Classroom E

12:00 – 12:25 p.m.

Molecular Epidemiology of Canine Parvovirus in Southern California Dogs and Impact on Infection Rates in Puppies

Margaret (Peggy) C. Barr - DVM, PhD

Canine parvovirus 2 (CPV-2) emerged globally in 1978 as a novel cause of enteric disease in domestic dogs and has since undergone frequent mutational events. A recent variant, CPV-2c, was first reported in Italy in 2000 and was detected in the United States in 2007.

During late summer of 2007, an outbreak of CPV occurred in southern California. To investigate the molecular epidemiology of CPV variants in southern California, we collected fecal samples or rectal swabs from 50 dogs with clinical signs of parvovirus gastroenteritis. Polymerase chain reaction was performed to amplify a 1.1 kb fragment of the capsid protein gene, VP2. Most (46/50) samples were the CPV-2c variant while four samples were characterized as CPV-2b. Three of the four CPV-2b samples came from pet store puppies imported from a midwestern state and thus were not representative of circulating CPV strains in southern California. The CPV-2c amplicons demonstrated frequent silent base changes in the VP2 gene, as compared to reference sequences. Such frequent mutations in this virus in Southern California dogs may lead to the evolution of new antigenic variants over time. One goal of our ongoing research is to continue surveillance for potential new CPV-2 variants in this region.

Although CPV-2c has been previously reported in the U.S., this is the first indication that CPV-2c has become the predominant circulating strain in the greater Los Angeles area. The efficient replacement of CPV-2b by CPV-2c suggests that CPV-2c carries an advantage over CPV-2b for infection or replication within domestic dogs in this area. We hypothesize that current vaccine strains generate antibodies that are less effective at neutralizing CPV-2c as compared to previous CPV variants. While active vaccination may provide full protection to older juvenile and adult dogs, passive (maternal) antibodies may be less effective at providing protection to young puppies prior to successful immunization. Thus an additional goal of our clinical parvovirus research is to investigate the kinetics of CPV2c protection by maternally-derived antibodies passed from CPV-2/2b immunized dogs to their offspring.

Equine Morning Session

Classroom F

11:00 – 11:40 a.m.

Stem cells in equine veterinary medicine

Joseph J Bertone - DVM, MS, DACVIM

Soft-tissue injuries in equine athletes are a common problem that leads to degradation of performance capability to complete retirement. In recent years, the use of regenerative therapy has improved outcome of these injuries. Platelet rich plasma, isolated tissue growth factors and stem cells, alone or in combination, have become common modalities in equine practice. Some of the specific uses are corroborated by scientific evidence with equine subjects. Other uses have received less than ideal support, but favorable anecdotes are common. Therapeutic use in acute tendon injury has garnered the most convincing evidence. Results are remarkable as compared to contemporaneous, as well as historical controls. Newer uses include intra-articular administration, as well as cartilage implantation, for amelioration of osteoarthritis. Again, results are impressive. The greatest accumulation of cells is found in the synovial lining after intra-articular administration. Reduction of inflammatory mediators has followed treatment. Other, poorly substantiated uses have included intra-dural administration for various spinal cord injuries and intra-arterial application for laminitis. The differential value of stem cells from fat, bone marrow, umbilical cord and amniotic origins has yet to be fully evaluated.

Equine Morning Session

Classroom F

11:45 am – 12:25 pm

Stem cell sources and banking

Kyung-Sun Kang - DVM, PhD

This presentation will introduce the different types of stem cells currently considered for therapeutic applications in man and animals. The evidence published on the difference in biological properties between cell sources will be reviewed with regards to therapeutic effects and indications. The advantages and limitations of isolation and storage techniques for adult stem will be discussed, along with current practices in human and veterinary medicine.

Afternoon Sessions:

Small Animal Afternoon Session

Classroom E

2:45 – 3:10 pm

Testing Efficacy of Novel Analgesics, Tapentadol and Pregabalin, in Small Animals

Lyon Lee – DVM, PhD, DACVA

Several pharmacological classes are available as analgesics, but most effective ones belong to opioids. However, mild to moderate pain can be successfully managed with non-opioid analgesics. Other analgesics include NSAIDs, corticosteroids, NMDA antagonists, alpha 2 agonists, and sodium channel blockers (local and systemic). Overview of these pharmacologic agents in pain management will be discussed

along with benefit of setting up multi-trial clinical trials involving preceptors of WesternU to test efficacy of a few novel analgesics including 'tapentadol' and 'pregabalin'.

Small Animal Afternoon Session

Classroom E

3:15 – 3:40 p.m.

Obesity and osteoarthritis: breaking the vicious circle

Dominique Griffon – DMV, MS, PhD, DECVS, DACVS

The purpose of this presentation is to review the relationship between degenerative joint disease and obesity in dogs and discuss strategies to manage these patients. Cases will illustrate the challenges faced by clinicians dealing with these conditions. The results of a preliminary study evaluating the combination of Slentrol® and a diet designed for joint diseases will be presented.

Equine Afternoon Session

Classroom F

2:45 – 3:45 p.m.

Recent Advances in Lameness Diagnosis in Horses and Ongoing Research

Babak Faramarzi - DVM, MSc, PhD

Lameness and its effect on equine health and welfare is a major concern for both clinical veterinarians and the greater equine industry. It has been estimated that US horse owners spend \$325 - \$544 million annually on the diagnosis and treatment of lameness. The total impact, including loss of use, has been estimated to exceed \$1 billion annually. Even considering its significance, diagnosis and treatment of lameness still remains a challenge. The most common method of diagnosing lameness is observing the horse walking/trotting on straight lines and circles, a subjective and often flawed process. There are several commonly used scales for grading lameness in horses. American Association of Equine Practitioners (AAEP) recommends a 5-tiered system: grade 1 being "very mild lameness", difficult to observe and not consistently apparent regardless of circumstances (such as direction, substrate, and rider); to grade 5 - "severe lameness", characterized by minimal ability to bear weight in motion or at rest, and/or inability to move. However, in the fourth edition of Adam's Lameness in Horses (1987), Dr. Stashak described a 1-4 lameness scale and Dr. Mike Ross suggested a modified 1-5 scale. The commonly used lameness scale in the UK is a 1-10 scale recommended by Wyn-Jones in 1998; simultaneously, Dr. Sue Dyson argued that this system is confusing and described a 1-8 scale system.

While those lameness grading systems are recommended by famous and experienced equine practitioners, many contradict, most are subjective, and none are perfect. Several studies have shown significant intra-observer variability. A recent study using 131 mature horses showed that experienced clinicians only agreed a limb was lame 76.6% of the time, and when evaluating the horse trotting on a straight line they agreed only 72.9% of the time; the agreement was lower for hind-limb lameness than forelimb. When detecting and grading lameness on a limb rated lower than 2 on the AAEP scale, there was even more intra-observer variability: when the mean AAEP lameness score was ≤ 1.5 clinicians agreed 61.9% of the time. This study reported 51.6% agreement when asking the clinicians to decide whether or not the horse was lame and picking the worst limb after full lameness evaluation. The intra-observer agreement is even lower among less experienced veterinarians.

Given the confusion, disagreement, and lack of universally accepted standard in the current subjective analysis of equine lameness, an objective, regulated system must be developed. Modern gait analysis technology can provide that objective and accurate lameness diagnosis. While past gait analysis systems have been onerous to coordinate and overly-expensive to implement, recent developments in technology have lowered the price and created more user friendly equipment. These advancements are expected to continue and soon they will become the standard for veterinarians to use when assessing an objective lameness evaluation in clinical settings.