

Title:

Infectious agent nucleic acid signatures associated with IMT in dogs

Investigators:

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Study description:

This study will use molecular strategies to determine whether or not nucleic acids from infectious agents can be identified in the blood of dogs with idiopathic immune-mediated thrombocytopenia.

Dogs with platelet counts less than 50,000/uL are eligible to participate. Dogs will be excluded for a body weight less than 2 kg.

Three mL of whole blood will be collected into an EDTA tube, and a brief questionnaire will be completed by the client or attending veterinarian. DNA and RNA will subsequently be extracted from whole blood and diverse degenerate PCR and RT-PCR screening will be performed, using primers of 9 viral, global bacterial and global rickettsial origin. PCR studies will be batched, so results are unlikely to be available during the dog's initial hospitalization. PCR results will be made available to the attending veterinarian when complete.

Duration of study:

The study is ongoing and will continue until 100 thrombocytopenic dogs are enrolled. It is expected that enrollment will be complete by June 2010.

Potential benefits to veterinary medicine:

Immune-mediated thrombocytopenia (IMT) is a spontaneously-occurring disease, which can be life-threatening. The primary inciting causes of IMT are unknown, although a temporal association has been demonstrated in association with vaccination, envenomation and certain infections. In the absence of an understanding of the cause(s), the mainstays of therapy are non-specific, and include systemic immunosuppression. Such therapy can be expensive, and is associated with extensive risks and side effects.

Childhood immune thrombocytopenia purpura (ITP) in humans has many similarities to canine IMT. Distinct from the situation in canine patients, however, the inciting cause of the immune dysregulation in most cases of childhood ITP is known to be prior viral infection, or vaccination.

Determining the primary etiologies for IMT in canine patients would improve our understanding of prognosis for these dogs. Furthermore, finding a treatable underlying infectious cause, in even a subset of these patients, would reduce the need for systemic immunosuppressive strategies, and the associated risks and side effects of such treatments.