Asymptomatic Dogs Valley Fever Immune Response Study

Background

Coccidioidomycosis (Valley Fever) is a common systemic fungal disease in the desert southwestern United States that affects both dogs and humans. We know that some dogs and people are able to fight off the infection with no illness, while others get sick and recover, and a small proportion become severely sick or die. The University of Arizona is working on a vaccine, first in dogs and then in humans, to prevent this disease.

The University of Arizona Valley Fever Center for Excellence (www.vfce.arizona.edu) is performing this study in dogs to learn what immune system cells "recognize" the fungus in dogs that have had Valley Fever and what soluble factors (cytokines) they are making. This information will: 1) help us understand what factors are associated with a successful immune response (recovered and asymptomatic dogs) compared to an inadequate response that leads to progressive or chronic illness in dogs; and 2) be able to predict whether a vaccinated dog made a cellular response that is likely to render them immune to Valley Fever.

The immune response is composed of antibody-mediated and cell-mediated immunity. While antibodies are very useful in determining that a dog has been infected, cell-mediated components (T-cells) of immunity are responsible for controlling and eradicating the infection. Our goal is to learn more about the T-cell responses in dogs that have antibodies but no disease, dogs that recovered from illness, and dogs that respond poorly to treatment or have chronic, recurrent problems with the disease.

This study is open to healthy dogs that have never been diagnosed with or treated for Valley Fever. Dogs will have a small amount of blood drawn and we will screen it for antibodies with a sensitive test, an enzyme immunoassay (EIA), at the University of Arizona. This test is not the same as a commercial Valley Fever test. Dogs that test positive for antibodies in the EIA test will return for a second blood collection to obtain white blood cells to evaluate his/her immune response in the T-cell assay. We will contact you if your dog has a positive test to arrange for a second blood collection.

Study Procedures

Your dog will initially have a small amount of blood drawn (2-3 mls, or about ¾ of a teaspoon) and we will extract serum from it. The serum will be frozen and tested in batches. It could take a few weeks to about 2 months to collect enough serum samples to test all at once.

If your dog has antibodies detected on our test, you will receive a call and we will arrange to collect a larger amount of blood from your dog. From this sample, we will separate the white blood cells and test them in vitro (in culture dishes in the laboratory) and study the cellular responses to the Valley Fever antigens (killed, broken up pieces of the fungus grown in the laboratory). For this portion of the test, we require at least 15 mls of blood. Therefore, dogs under 10 lbs are not eligible to participate for their safety.

If your dog does not have antibodies, we will send you an email after we have tested his/her blood. If you do not provide an email address, you can provide a SASE and we will mail you a response saying your dog has no antibodies in the serum. If you provide neither and we do not contact you, you may assume the test was negative. Individual phone calls to report negative test results will not be made.

The results of the T-cell assay will not be reported individually. The data will be summarized as a set and subjected to statistical analysis to compare with other groups of T-cell data we are collecting on dogs that have successfully recovered from Valley Fever or dogs that have progressive or chronic infection that they are struggling to control.