

## The heart of the matter: *Salukis are different*

by Maril Semph



Recently, I read an interesting article about an exciting new blood test that can help diagnose cardiac disease in dogs. The article was written for an American canine publication by Dr. Jeff Grognet, D.V.M. – a prolific Canadian writer of canine health issues.

This prompted me to read up on the BNP test. BNP stands for brain natriuretic peptide, which is released by the heart muscle as a result of heart disease. This is well documented in human medicine, and has been studied in dogs and cats as well. Thus, a quantitative blood test for canines, available for veterinary use has been developed and is now being marketed by the Veterinary Diagnostics Institute. The test is intended to identify the early stages of cardiac disease so affected dogs can be referred for a full cardiac workup, including an echocardiogram performed by a cardiologist.

The test costs approximately \$100 (US) to ad-

minister and process, compared to \$300-\$600 (CDN) for Doppler ultrasound. It is promoted as a “simple blood test to detect heart disease and heart failure” that “in conjunction with a veterinary exam, is useful in identifying heart disease in both symptomatic and asymptomatic dogs.”

The literature also suggests that the test is sensitive enough to detect BNP in young asymptomatic dogs, concluding that these dogs should be excluded from breeding programs (as they will develop cardiac disease later in life). Obviously, since the test would be “less stressful and less expensive than x-ray or echocardiogram” tests, this could be a way to screen breeding stock.

With this information, I decided to put the test ‘to the test.’ I asked my local vet clinic to test my hounds. The clinic was unwilling to lay out the initial investment in test kits, so I turned to my friend who sent me the Grognet article to see if she would have her Salukis tested. Her

vet offers the test at his clinic.

We expected both animals to pass this test with flying colours. They are healthy and in the prime of their lives. They free run and free course regularly. Imagine our surprise when the test results indicated that each hound had a BNP level so extremely elevated (almost twice the upper limit for “healthy”), that, according to the test parameters, they should not even be alive!

In our distress, we consulted Dr. Mary Dee Sist, a veterinarian at Michigan State University, who is well known in the Saluki community for her Saluki-specific research on cardiac health issues. Dr. Sist’s reply was both reassuring and cautionary:

“The company, Veterinary Diagnostics Institute, that offers the test for B-type natriuretic peptide (BNP) has been doing a great job of marketing their test. This test is used in humans to reveal cardiac disease and the BNP level is proportional to the extent of the disease. Their claims for its usefulness in dogs are based on Dr. Oyama’s paper published in *AJVR*, Vol. 68, No.1, Jan. 2007.

“In the study, they screened mostly high-risk Dobermans for dilated cardiomyopathy (DCM) via an ECG and standard 2D, M-mode and Doppler echocardiographic examinations. They concluded that the dogs had occult DCM (with no clinical signs) if they had 1 or more ventricular premature beats on a single ECG or an LVIDd > 46 mm or a LVIDs > 38mm or a LV% fractional shortening < 18% in an echocardiogram. The BNP assay and others were run on this occult group of dogs. Analysis revealed that BNP had the greatest positive and negative predictive values and that it had adequate sensitivity (95.2%) and specificity (61.9%) to be of diagnostic use, but wrong answers were more likely to be false positives. They state ‘In the case of occult DCM, false-positive results, although reducing the overall financial effectiveness of the assay, prompt additional diagnostic procedures that are not necessarily harmful to the patient; thus, the costs associated with false positive results are primarily financial rather than medical.’ They also said that another study found that BNP concentrations in affected Box-

ers were not increased, compared with concentration in control dogs. And that “additional studies targeted toward cardiomyopathy in specific breeds are indicated.

“My Saluki cardiac study was expanded over many years because over one-third of healthy Salukis had arrhythmias and over a half of the normal Salukis had either large ventricular sizes or decreased fractional shortening that would have classified them as having occult cardiomyopathy according to the screening parameters used in the BNP study. We followed these

working on making a kit and that might prove useful, especially in cats.

“I appreciate your concern for your Salukis by screening them for heart conditions. But what is clear is that you should have them examined by a cardiologist who is familiar with Salukis or at least other sighthounds and knows that they can have cardiac changes associated with their athleticism and be normal.”

So, after my initial excitement about this new, ‘economical’ way to possibly screen young Salukis for heart disease, I’ve concluded that the

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*A new blood test to detect early signs of heart disease in dogs needs more research before it can be used effectively to diagnose cardiac problems in Salukis – or any sighthound.*

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dogs over their lifetimes to see if any developed heart failure. We then harvested their hearts and determined the pathology. Out of 100 Salukis, only one definitely had primary DCM and another two possibly had secondary cardiomyopathy. So the dogs in the Veterinary Diagnostics Institute’s study need to be followed over time to see what cardiac signs develop. Then their hearts need to be examined histologically after death to see if the heart failure was caused by primary dilated cardiomyopathy or secondary to heart valve failure. *And* breed-specific data needs to be generated.

“Most board-certified veterinary cardiologists feel that the BNP cutoffs have yet to be validated and are not sure how useful the test is for cardiologists who are already equipped to diagnose heart disease in their patients. The cardiologist that I work with says that the BNP assay doesn’t discriminate conditions/severity as well as even a thorough examination by a cardiologist.

“The BNP assay is clearly useful when an emergency-room veterinarian sees a patient in respiratory distress and wants to quickly know whether it is likely to be cardiac in nature or primarily pulmonary in nature. The company is

test is probably not useful to Saluki breeders, until further research tells us what the normal readings for Salukis should be. That, of course will depend on the Veterinary Diagnostics Institute doing Saluki-specific studies – which we have asked them to consider.

Sandra Gahan and Kathleen Morton recently had their Salukis screened with Doppler echocardiographic exams at a cardiac clinic in Maryland, conducted by Dr. Luis Brava-Ruivo. They spoke with Dr. Brava-Ruivo, who travels with his equipment for club-sponsored clinics. He conducts testing for about \$180 (CDN). Since getting useful, accurate test information is our objective, the Saluki Club of Canada has invited Dr. Brava-Ruivo to come to Canada in the near future. Details will be available soon (or contact Sandra Gahan directly).

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*Further reading: Publications on the BNP test can be found on the Internet by using the search words “brain natriuretic peptide; canine” and “Veterinary Diagnostics Institute; BNP.” The Vdxl web site links to a slide presentation and other published studies.*