

IDEXX Angio Detect* Test

The Only In-Clinic Antigen Detection Test for *Angiostrongylus vasorum*

Introduction

Canine angiostrongylosis is an emerging disease with increasing numbers of diagnosed cases in dogs and other canids. There is an expanding prevalence of the disease in the UK, Denmark, Germany and other parts of Europe. It is caused by *Angiostrongylus vasorum* which belongs to the family of *Angiostrongylidae*. First discovered in France, it is sometimes called the French heartworm.

Angiostrongylosis is a crucial differential diagnosis in any dog with respiratory, bleeding, neurological or syncopal signs of unknown aetiology. Other possible symptoms include coughing, dyspnoea, coagulopathy, weight loss, vomiting, abdominal pain, lumbar pain and heart failure. Subclinical angiostrongylosis has also been reported. Until now, the Baermann technique has been the gold-standard method for detecting the parasite. However, this method has well understood drawbacks: it is cumbersome, time-consuming, subjective and limited by the intermittent shedding of the larvae in the faeces. An accurate diagnosis can be elusive and today, it is likely that the disease is under diagnosed.

IDEXX Laboratories now offers the Angio Detect* Test for in-clinic detection of an antigen released by *A. vasorum* adults in a plasma or serum sample. The presence of the antigen in canine blood indicates the animal is actively infected with the *A. vasorum* parasite.

Study 1: Validation of the Angio Detect In-clinic Test

To determine diagnostic sensitivity, the Angio Detect Test was compared to conventional reference testing results in a blinded and randomized study.¹

Study Design

Faecal and serum samples, obtained concurrently, were submitted to IDEXX Reference Laboratories, UK (ISO 17025:2005 accredited) from 230 dogs with suspected angiostrongylosis. The faecal samples were analysed using the Baermann technique and the serum was tested with the Angio Detect Test.

Results

As shown in Table 1, the Angio Detect Test has a relative sensitivity of 98.1% and a relative specificity of 99.4%

compared to the Baermann technique. The three discrepant samples were tested with an additional serological test: an ELISA test developed and validated by the University of Zurich.² In all cases, it confirmed the result of the Angio Detect Test.

Study 2: Validation of the Angio Detect Test with samples from dogs harbouring other nematode infections

To demonstrate that the Angio Detect Test does not cross react with antigen from other nematode infections, serum samples from dogs infected with *Crenosoma vulpis* (n=3), *Dirofilaria immitis* (n=79) and *Dirofilaria repens* (n=4) were tested. Data from this study is shown in Table 2 and indicates no cross-reaction with samples from dogs infected with other common nematodes.

Table 2: Angio Detect Test results with serum samples from dogs with other nematode infections

Nematode Species	Positive/Tested
<i>Crenosoma vulpis</i>	0/3
<i>Dirofilaria immitis</i>	0/73
<i>Dirofilaria repens</i>	0/4

Conclusion

The new Angio Detect Test exhibits high sensitivity and specificity compared to the Baermann technique allowing veterinary surgeons to quickly rule in or rule out canine angiostrongylosis in 15 minutes.

The Angio Detect Test is an easy-to-do in-clinic test that allows rapid identification of canine angiostrongylosis and treatment. In endemic areas, you should consider subclinical angiostrongylosis before surgery.

References

- Using the Baermann technique at IDEXX Reference Laboratories. Data on file at IDEXX Laboratories, Inc. Westbrook, Maine USA.
- Schnyder M, Tanner I, Webster P, Barutzki D, Deplazes P. An ELISA for sensitive and specific detection of circulating antigen of *Angiostrongylus vasorum* in serum samples of naturally and experimentally infected dogs. *Vet. Parasitol.* 2011;179(1-3):152-158.

Table 1: Comparison of the Angio Detect Test with the Baermann technique (performed by a reference laboratory)

Comparison Test	Sample Size Angio Detect/Reference Test ^a				Total	Sample Type	Relative Sensitivity and Specificity 95% Confidence Limit
	+ / +	- / +	+ / -	- / -			
<i>Angiostrongylus vasorum</i> ^a	53	1 ^b	2 ^c	174	230	Serum/Plasma	Sen., 98.1% (95% CL 88.9%–99.9%) Spec., 99.4% (95% CL 95.5%–99.9%)

^aBaermann Faecal Flotation, ^bNegative by Zurich ELISA, ^cPositive by Zurich ELISA

Clinical Guidance on Angiostrongylosis

