Evaluation of two point-of-care tests to diagnosis of FIV and FeLV infections

Key Words : Bionote Anigen, feline retrovirus, FIV, FeLV, serological diagnosis

Introduction

FIV and FeLV are Retroviruses associated mainly with feline neoplasms. Infection by FeLV increases the risk of developing neoplasms by more than 60 times, especially lymphoma and leukemias. For FIV, chronic disease and / or opportunistic infections are commonly observed.

The diagnosis of these infections is important due to the severity of the consequences resulting from them, and the fact that this knowledge will influence the handling of the animal and the appropriate treatment.

The rapid test is used for the diagnosis of both infections as a screening methodology. The diagnosis for FeLV is made by detecting the capsid p27 protein, and for FIV the best marker of infection is the detection of antibodies of the IgG class.

Purpose

The objective of this study was to compare two commercial rapid tests for the detection of FIV and FeLV.

① **Anigen Rapid FIV/FeLV Test Kit (BIONOTE)**
② Product 'S' FeLV / FIV Test (Company 'I')

Quantitative real-time PCR was used as confirmatory test for all samples.

Materials and Methods

The two Rapid tests available on the market, the Anigen Rapid Test (Bionote) and Product 'S' (Company 'I'), were evaluated in a total of 178 blood samples from domestic cats.

All tests were performed following the manufacturers' product use recommendations.

Results

The test results for the evaluation of two point-of-care tests to diagnose FIV and FeLV infections were described in Table 1, Table 2 in next page.

Conclusion

In this study, there was no statistically significant difference between the two tests and the results showed good agreement.

For FeLV, the largest number of false positive results was observed in the Product 'S' test and the Anigen Rapid test showed greater specificity in relation to the Product 'S' test.

The Anigen Rapid test is easy to perform and with performance similar to other tests on the market, it can be used in clinics to help control the spread of these infections.

1. S.O. Medeiros, B.J.A. Silva, et al., Evaluation of two point-of-care tests to diagnosis of FIV and FeLV infections. Arq. Bras. Med. Vet. Zootec., v.71, n.2, p.447-454, 2019

	Anigen	Product 'S'	qPCR	Total
FeLV	Positive	Negative	Negative	3
	Negative	Positive	Negative	5
	Negative	Positive	Positive	1
	Negative	Negative	Positive	3
FIV	Positive	Negative	Negative	2
	Negative	Positive	Positive	1

Table 1. Sampling discordant between the two Rapid tests, with the result of the qPCR

		Anigen	Product 'S'	P-value
FeLV	Sensitivity [95% CI]	90.70% [77.86-97.41]	93.02% [80.94-98.54]	0.5078
	Specificity [95% CI]	97.78% [93.64-99.54]	96.30% [91.57-98.79]	
	PPV [95% CI]	92.86% [80.52-98.50]	88.89% [75.95-96.29]	
	NPV [95% CI]	97.06% [92.64-99.19]	97.74% [93.55-99.53]	
FIV	Sensitivity [95% CI]	97.06% [92.64-99.19]	100% [86.77-100]	1.000
	Specificity [95% CI]	98.68% [95.33-99.84]	100% [97.6-100]	
	PPV [95% CI]	92.59% [75.71-99.09]	100% [86.77-100]	
	NPV [95% CI]	99.34% [96.37-99.98]	100% [97.6-100]	

Table 2. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and p-value of the Rapid tests evaluated in the study. (CI: confidence interval)