



ASSESSMENT OF THE 1,2-O-DILAURYL-RAC-GLYCERO GLUTARIC ACID-(6'-METHYLRESORUFIN) ESTER (DGGR) LIPASE ASSAY FOR THE DIAGNOSTIC EFFICACY OF CONCURRENT PANCREATITIS IN DOGS WITH CONGESTIVE HEART FAILURE.



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C. Estenbergh, N. Van Israël (Animal Cardiopulmonary Consultancy [ACAPULCO], Masta, Belgium)

Introduction

Pancreatitis is a common disorder of the exocrine pancreas in dogs which can vary widely in presentation. Clinical signs are often non-specific, making a definitive diagnosis challenging.^{1,2}

The most commonly used diagnostic method is measurement of circulating markers of pancreatic inflammation in the blood like TLI, cPLI and lipase. TLI and cPLI are time-consuming and/or expensive and most of the 'old' lipase assays that were in use had poor sensitivities and specificities.^{1,3} More recently, the DGGR lipase assay has been developed and it has been established as a highly reliable screening test for pancreatitis in the general canine population.^{1,2}

In our practice, we routinely perform blood work in dogs with cardiac diseases (with and without congestive heart failure). Our laboratory includes the lipase DGGR assay in their standard profile and so it was noticed that the DGGR lipase levels were often elevated in dogs with no clinical signs of pancreatitis nor abnormal findings on pancreatic imaging. The objective of this study was therefore to assess the sensitivity and specificity of this test for the diagnosis of concurrent pancreatitis in dogs with congestive heart failure.

Methods

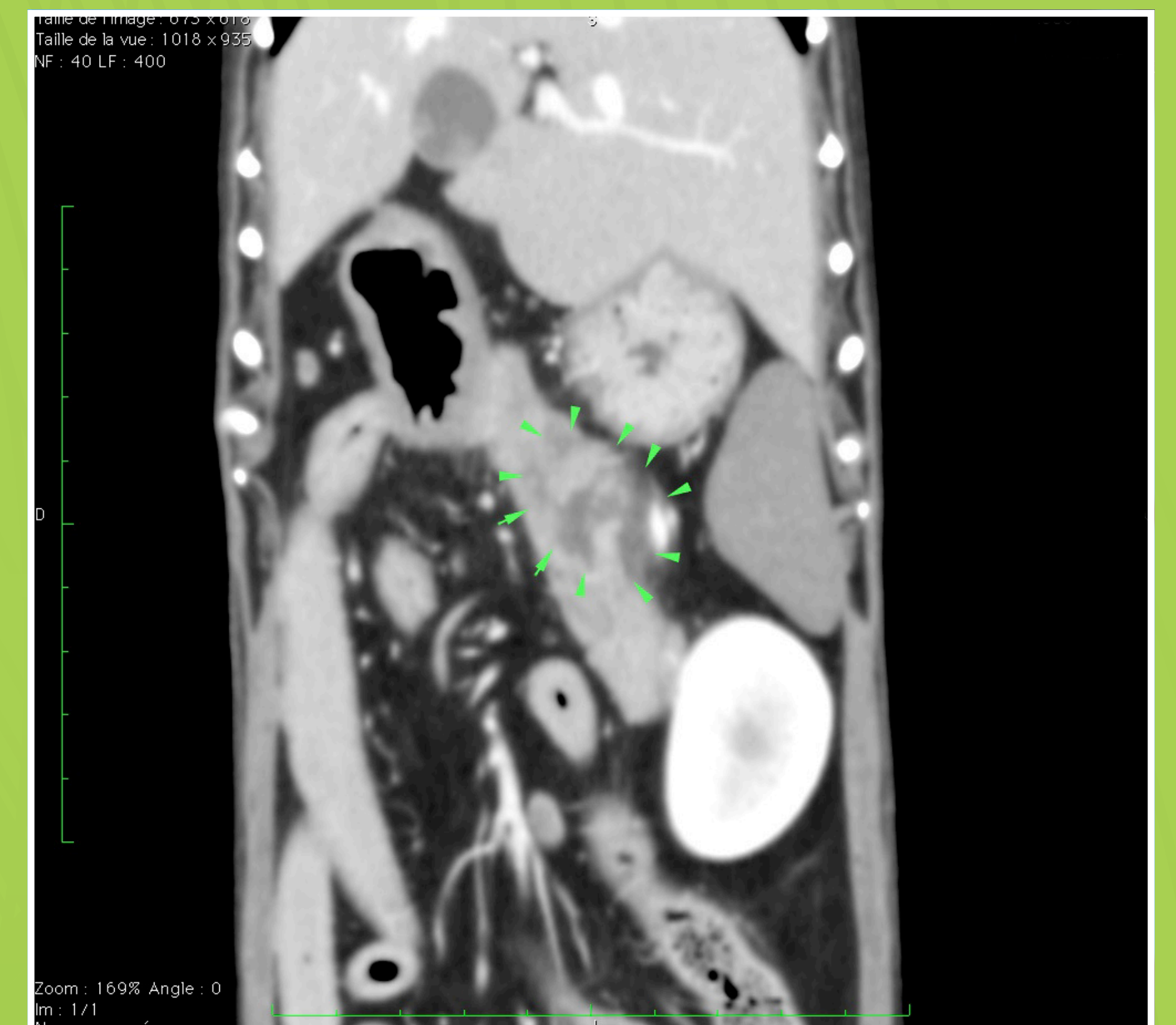
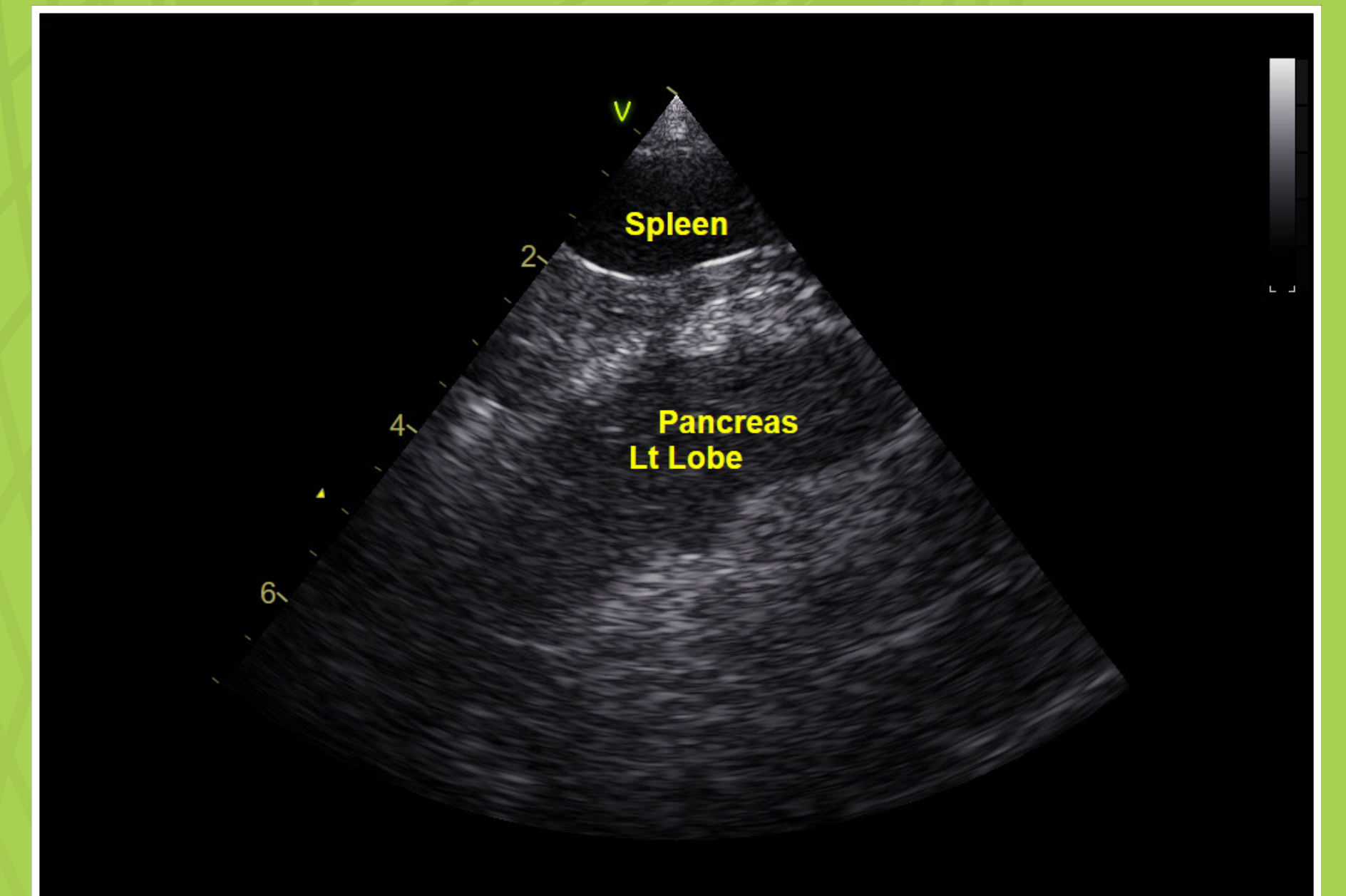
Medical records of dogs with CHF and with serum lipase measured using the DGGR assay were retrospectively evaluated. Serum lipase levels above 213 IU/L were considered indicative of pancreatitis according to the reference values provided by the referral lab (Synlab, Belgium). The diagnosis of pancreatitis was confirmed or ruled out by the presence or absence of clinical signs that could be attributed to pancreatitis and by abnormal findings on pancreatic imaging (ultrasonography and/or computed tomography).

Results

Of 58 dogs with CHF, 17 dogs showed elevated serum lipase activity (mean: 379,5 IU/L (239 - 927 IU/L)). In 1 of these 17 dogs the diagnosis of pancreatitis was confirmed by the presence of clinical signs (reduced appetite, vomiting) and typical findings on pancreatic imaging. This dog also had the highest lipase level detected (927 IU/L). None of the remaining 16 dogs showed signs indicative of pancreatitis on clinical examination or abdominal imaging. The sensitivity of the DGGR lipase assay in diagnosing pancreatitis in these dogs was 100%, the specificity was only 71,9%. The Positive Predictive Value (PPV) and Negative Predictive Value (NPV) of the test were respectively 5,9% and 100%.

Discussion

The DGGR lipase assay is highly sensitive in detecting pancreatitis in dogs with CHF but many false positives occur. This can probably be attributed to the pancreas' sensitivity to hypotension and/or hypoperfusion which is often present with CHF. A potential solution could be a higher cut-off value. A negative result rules out the presence of concurrent pancreatitis in dogs with CHF.



		Gold standard test			
		positive	negative		
DGGR Lipase test	positive	1	16	5,9%	Positive Predictive Value (PPV)
	negative	0	41	100%	Negative Predictive Value (NPV)
		100%	71,9%		
		Sensitivity	Specificity		

Conclusion

Elevated serum lipase activity measured by the DGGR lipase assay should be interpreted with caution in dogs with CHF failure as false positive results may occur. Diagnosis of pancreatitis in these dogs should be confirmed by the presence of clinical signs and abnormal findings on abdominal imaging.

References:

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