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Preliminary data about Paraoxonase-1 (PON-1) as a marker for Feline Infectious Peritonitis (FIP).

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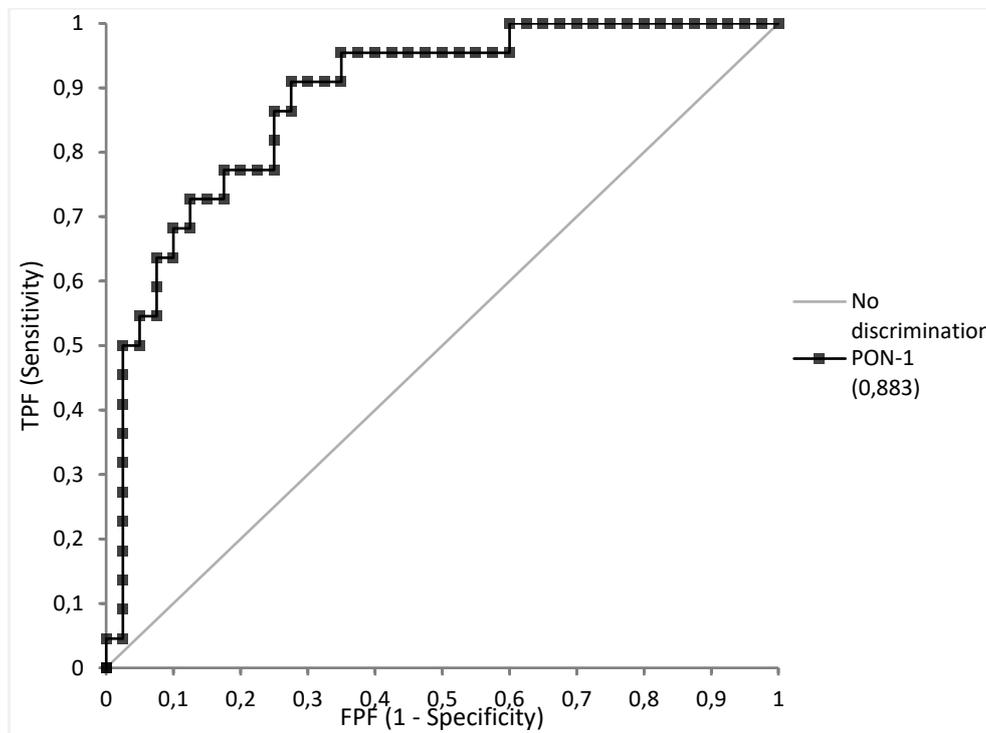
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Feline infectious peritonitis (FIP) is a fatal disease in which the definitive diagnosis is achieved by immunohistochemistry (IHC) on post-mortem biopsies (Pedersen, 2007). The clinical suspicion is aroused by signalment, clinical signs and several laboratory tests, including alpha-1-acid glycoprotein measurement for which the only validated kit is no longer available (Paltrinieri et al., 2007). Paraoxonase-1 (PON-1) is a serum enzyme with antioxidant activity, considered as a negative acute phase protein in several species (Novak et al., 2010). Since inflammation plays a major role in FIP, and due to the high susceptibility of cats to oxidation, it could be of great interest the evaluation of this enzyme as a diagnostic marker for FIP (Tecles et al., 2015). The aim of this study was to measure paraoxonase-1 in healthy cats and cats with clinical signs consistent with FIP (both wet or dry form), in order to evaluate the utility of this parameter in the diagnosis of FIP. Sixty-two cats were enrolled and divided into three groups: healthy (n=16), IHC-confirmed FIP (n=22) and NON FIP with similar clinical signs (n=24). PON-1 was measured on one sample of serum, using an enzymatic method, already validated in cats (Rossi et al., 2014). Results showed significantly lower PON-1 activity in FIP cats (mean \pm SD: 29.1 \pm 16.3 U/mL; median: 24.4; IQR: 16.6-38.3), compared with healthy cats (90.1 \pm 24.1 U/mL; median: 86.0; IQR: 76.7-105.7; P<0.001) and with “non-FIP” cats (55.9 \pm 28.3 U/mL; median: 51.9; IQR: 35.7-68.8, P<0.001). A significant difference was also found between healthy and “non-FIP” cats (P<0.001). The receiver operating characteristic (ROC) curve demonstrated that PON-1 may discriminate cats with and without FIP (AUC 0.88; CI 95%, Figure 1). At the cut-off that maximizes the diagnostic power of the test (40,70 U/mL), sensitivity and specificity for FIP were 77% each, suggesting that PON-1 may be a reliable marker in association with other confirmatory tests and with signs consistent with the disease.

Figure 1: ROC curve for Paraoxonase-1. The furthest point from the no-discrimination curve is the one that maximizes the diagnostic power of the test, where sensitivity and specificity for FIP were 77% each.



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