IS THE CXC-CHEMOKINE CXCL8 INVOLVED IN THE BREED PREDISPOSITION OF WEST HIGHLAND WHITE TERRIER TO CANINE IDIOPATHIC PULMONARY FIBROSIS ?

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Canine idiopathic pulmonary fibrosis (canine IPF) is a progressive interstitial lung disease of unknown aetiology and pathophysiology, mainly described in middle-aged to old West Highland white terriers (WHWT). CXCL8 (IL-8) is a proinflammatory chemokine probably involved in the pathogenesis of human IPF, where it appears to be a diagnostic and prognostic biomarker in serum and BALF. In dogs, little is know about the role of CXCL8 in the pathogenesis of IPF. Recently an increased CXCL8 gene expression has been shown in lung tissues from IPF WHWT compared to control dogs from other breeds. The aim of the present study was to compare serum CXCL8 levels in healthy WHWT versus WHWT with IPF and healthy dogs from terrier breeds other than WHWT and from non-terrier breeds.
Ten WHWT with IPF (mean age 10 years, range 5-14) and 71 healthy dogs, including 12 WHWT (9, 3-17), 10 Scottish terrier (6, 1-10), 10 Jack Russell terrier (7, 1-12), 10 Maltese (6, 1-13), 9 Cavalier King Charles Spaniel (4, 1-8), 10 Labrador Retriever (6, 2-12) and 10 Malinois Belgian Shepherd (5, 3-8) entered the study. Health status was based on clinical examination, serum biochemistry and haematology, as well as high-resolution computed tomography in 9/12 WHWT. IPF was confirmed by histopathology. Serum CXCL8 concentrations were determined by ELISA (Canine CXCL8/IL-8 Quantikine ELISA Kit, R&D systems). Results between IPF and healthy WHWT, and between healthy dogs of different breeds were compared using a global linear model (SAS® software) incorporating the effects of covariates age and gender; $p \leq 0.05$ was chosen as level of significance.
Serum CXCL8 concentrations are expressed in pg/ml and given as lsmean ± standard error. No difference in serum CXCL8 levels was detected between WHWT with IPF (4634,3 ± 541,5) and healthy WHWT (3806,7 ± 369,4). However, serum CXCL8 concentration was significantly higher in healthy WHWT compared to each of the other groups of healthy dogs. Moreover, serum CXCL8 concentrations were higher in Scottish terrier (2685,2 ± 314,4) and Maltese (2563,8 ± 339,7) than in Cavalier King Charles Spaniel (1527,5 ± 348,8) in which the lowest concentration was found.
Results of the present study show that serum CXCL8 concentration is high in both healthy and IPF WHWT compared to healthy dogs from other breeds. Therefore, CXCL8 (1) cannot be used as a serum diagnostic biomarker for IPF; (2) might be related to the breed predisposition of the WHWT for IPF.

Conflicts of interest: No conflicts of interest reported.