

Analysis of risk factors of canine diabetes mellitus: a matched case-control study

Pöppl, A.G., Meyrer, B., Carvalho, G.L.C., Vivian, I.F., Corbellini, L.G. and González, F.H.D., Universidade Federal do Rio Grande do Sul, Brazil; lgcorbellini@hotmail.com

Canine diabetes mellitus (CDM) is a multifactorial disease with a high incidence secondary to autoimmune insulinitis, pancreatitis or Cushing's syndrome. However, many environment factors have been associated with CDM, such as unbalanced diet, overweight, lack of physical activity, and diestrus in bitches. The aim of this study was to identify possible risk factors for diabetes in dogs throughout a matched case-control study in southern Brazil. The sample comprised 110 diabetic dogs diagnosed between 2004 and 2011 at the University Veterinary Hospital and by a private veterinary endocrinology consulting, which were paired by breed, age and sex with 136 dogs (case-control ratio of 1:1.2). The owners were contacted by phone and interviews performed by three blinded trained interviewers. A previous validated questionnaire was used to assess exposure to several risk factors. Univariate conditional logistic regression was performed in order to select potential risk factors associated with CDM. Only variables with a $P < 0.20$ were offered to the multivariable model. The multivariate model was built using forward selection starting with the variables with the lowest AIC values from the univariate analysis and backward elimination of variables with a $P \geq 0.05$. Two variables were significantly associated with CDM in the final model ($P \leq 0.01$): unbalanced diet (OR=4.85; IC 95%: 2.2-10.7) and overweight (OR=3.5; IC 95%: 1.6-7.5). This result is similar with previous European studies. A correlation matrix analysis showed that both variables were independent, and both factors are known as insulin resistance inductors. By conclusion we assume that feed with an unbalanced diet and keeping the dog overweight can predispose to diabetes development.