

EVALUATION OF THE BREEDING PROGRAM AIMING AT REDUCING THE PREVALENCE OF MYXOMATOUS MITRAL VALVE DISEASE IN CAVALIER KING CHARLES SPANIELS IN DENMARK. Birkegaard AC<sup>1</sup>, Reimann MJ<sup>1</sup>, Hægström J<sup>2</sup>, Martinussen T<sup>3</sup>, Pedersen HD<sup>4</sup>, Olsen LH<sup>1</sup>. 1. Department of Veterinary Disease Biology, University of Copenhagen, Frederiksberg, Denmark. 2. Department of Clinical Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden. 3. Department of Biostatistics, University of Copenhagen, Denmark. 4. Novo Nordisk A/S, Maaloev, Denmark.

Cavalier King Charles spaniels (CKCS) are predisposed to myxomatous mitral valve disease (MMVD). Studies have demonstrated a strong genetic background. The objective of the study was to evaluate the effect of a breeding program involving auscultation and echocardiography aimed at reducing the prevalence of MMVD.

Purebred CKCS (n=997) were examined for the Danish Kennel Club mandatory breeding program during the period from 2002 to 2011. Each dog was evaluated 1-4 times with the total of 1380 examinations. Auscultation and echocardiography were performed to evaluate mitral regurgitation murmur (MRM) severity and degree of mitral valve prolapse (MVP).

The risk of having MRM in 2010-2011 compared to 2002-2003 was estimated using linear regression test (exact condition binary logistic regression), adjusting for repeated measurements. In 2010-2011, dogs were estimated to have 71% reduced risk of having MRM than dogs in 2002-2003 if they were a product of the breeding program ( $P=0.0017$ ). A dog was defined as a product of the breeding program if both parents were approved by the breeding program. If non-products of the breeding program (for example imported dogs with parents with unknown cardiac status) were included in the analysis, reduced risk of having MRM did not reach statistical significance (OR 1.71;  $P=0.06$ ).

In conclusion, the mandatory breeding program, based on auscultation and echocardiography, significantly reduced the prevalence of MMVD over the 8 to 10-year period. Therefore, such breeding programs are recommended for CKCS.