Breed a Healthier Cat

Hypertrophic cardiomyopathy (HCM) in ragdoll cats has been associated with a substitution mutation in the myosin binding protein C3 (MYBPC3) gene. Prognosis is poor with HCM, and HCM is more likely to be severe in those homozygous for the mutation; however, the outcome for ragdoll cats tested for the MYBPC3 mutation has not been studied. Breeders and owners of MYBPC3 genotyped ragdolls completed a questionnaire to determine the influence of genotype on survival. Questions focused on signalment, genotype, current status (alive or dead), and date and circumstance of death (cardiac or noncardiac), if applicable.

Results found ragdoll cats homozygous for the C3 mutation were more likely to die from cardiac death and had a significantly shorter time before cardiac death. Mean survival time for homozygous cats was 5.65 years compared with >16.7 years and >15.2 years for heterozygous and wild-type (WT) cats, respectively. There was no significant difference in survival time between heterozygous or WT cats. Data suggest an incomplete dominance inheritance pattern. Study information may be helpful in counseling breeders and owners regarding genetic testing outcomes.

Commentary

Now that genetic testing is available for a specific genetic mutation, cats can be tested at an early age. Cats that test positive for the mutation can be brought to their veterinarian where owners can ask 2 basic questions: 1) What does this mean in terms of health and disease development, and; 2) Should I breed my cat? In this study, homozygous-positive cats were at a significantly greater risk for dying from a cardiac cause, and for dying at a much younger age, than heterozygous-positive cats or cats without the mutation. Thus, answers for the questions above would be: 1) If the cat is homozygous positive for the mutation, it is more likely to develop and suffer clinical signs from HCM. If the cat is heterozygous-positive for the mutation, this does not necessarily mean that it will develop the disease or clinical signs associated with HCM. And, 2) breeders should not breed homozygous positive cats but should be encouraged to breed heterozygous-positive cats to cats negative for the mutation to reduce the incidence of homozygous-positive cats and cats developing clinical signs.—*Amara Estrada, DVM, DACVIM (Cardiology)*

Source

Association of the myosin binding protein C3 mutation (MYBPC3 R820W) with cardiac death in a survey of 236 Ragdoll cats. Borgeat K, Cassamian-Sorrosal D, Helps C, et al. *J VET CARDIO*L 16:73-80, 2014.

Tumors Go Global

Canine transmissible venereal tumor (CTVT) is a type of cancer transmitted from dog to dog during coitus. The tumors are most often associated with the external genitalia in male and female dogs. Evidence suggests CTVT originated several thousand years ago but global spread has occurred more recently.

The authors analyzed CTVT literature and used a questionnaire from 645 veterinarians and animal health workers in 109 countries to assess the global distribution and prevalence of CTVT. CTVT was found to be endemic in at least 90 countries, with worldwide distribution. CTVT has a prevalence rate of at least 1% in many countries in South and Central America, Africa, and Asia. It is only endemic in remote indigenous communities in the United States and Australia. The United Kingdom eradicated CTVT inadvertently when it imposed stricter dog control laws. These laws reduced the population of free-roaming dogs, thought to be a reservoir for CTVT. Spaying and neutering were also found to be associated with decreased CTVT rates. No association was found with gender or with other infectious diseases. Treatment using vincristine alone or in conjunction with surgery, doxorubicin, or radiotherapy was most common. The authors conclude that this study can be used to develop more effective control measures to reduce CTVT rates around the world.

Commentary

While CTVT is more common in some countries and more frequent in intact dogs, it is important to note that there is no definitive pattern of occurrence. CTVT should be on the list of differentials for intact and neutered dogs, anywhere in the world when clinical signs are compatible. It remains a highly treatable disease with an excellent prognosis. This paper suffers from a lack of objective response criteria for the survey, lack of definitive diagnosis, and low numbers of responders (veterinary and non!) in multiple countries. Other factors to consider that may have influenced results are the prevalence of diseased stray dogs (ie, not evaluated by veterinarians), and availability of veterinary care in different countries or areas.—*Cecilia Robat, DVM, DACVIM (Oncology)*

Source

The changing global distribution and prevalence of canine transmissible venereal tumour. Stradova A, Murchison EP. *BMC VET RES* 10:168, 2014.

continues