Factors impacting kitten survival: analysis of 28065 kittens from 7075 litters

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In the feline species, kitten mortality rate is high, ranging between 16-30% of kittens born. The identification of mortality causes is challenging. Preventive strategies that target risk factors of neonatal/pediatric mortality could help to improve kitten survival. Nevertheless risk factors are poorly studied in the feline species [1,2]. Our objective was to contribute to their identification from a large population.

Data were collected from an online software dedicated to breeding management (Breeding Management Support®, Royal Canin, Aimargues, France). French breeders recorded information on a voluntary basis from 2011 to 2014. Effects of racial type (based on breed genetic origin [3]), queening month, age of genitors, pregnancy length, litter size and sex ratio were evaluated on kitten mortality by multivariable models (SAS® 9.1, SAS Institute, Cary, NC, USA).

A total of 5303 queens (45 breeds) gave birth to 28065 purebred kittens from 7075 litters. The two most represented breeds were Persian and Maine Coon (23.2% and 17.8% of kittens born, n=6502 and n=4994 respectively). Queening occurred all along the year following a bimodal distribution with a peak in April (15.1%) and in July (12.1%). Mean litter size was 4.0 ±1.9 kittens (total number of kittens born). Global sex ratio of born kittens was 0.53 with 35% (n=2453) of litters dominated by females, 44% (n=3134) by males and 21% (n=1488) balanced. The global mortality rate (from 0 to 2 months including stillbirth) in kittens was 15.9% (n=4450), including 8.5% of stillbirth (n=2380). Sex ratio of stillborn was 0.56. Among the 25685 kittens alive at birth, 7.9% (n=2070) died before 2 months (post-natal mortality). Stillbirth was significantly affected by the litter size ($p<0.0001$) but by no other tested factors. Neonatal/pediatric mortality rate (from 0 to 2 months stillbirth excluded).was 7.4% (n=2070). It was affected by sex ratio ($p=0.0086$), queen's age at mating ($p=0.0199$) but not by litter size, racial type, male age at mating, queening season or gestation length.

Kitten survival is a multi-factorial entity with interrelationship between physiological, immunological, nutritional and environmental factors. This study evidences the influence of litter size, sex ratio and queen age on kitten survival whose biological mechanisms remain to be elucidated.

[1] Sparkes AH, Rogers K, Henley WE, Gunn-Moore DA, May JM, Gruffydd-Jones TJ, et al. A questionnaire-based study of gestation, parturition and neonatal mortality in pedigree breeding cats in the UK. J Feline Med Surg 2006;8:145–57. doi:10.1016/j.jfms.2005.10.003.

[2] Ström Holst B, Frössling J. The Swedish breeding cat: population description, infectious diseases and reproductive performance evaluated by a questionnaire. J Feline Med Surg 2009;11:793–802. doi:10.1016/j.jfms.2009.01.008.

[3] Menotti-Raymond M, David VA, Pflueger SM, Lindblad-Toh K, Wade CM, O'Brien SJ, et al. Patterns of molecular genetic variation among cat breeds. Genomics 2008;91:1–11. doi:10.1016/j.ygeno.2007.08.008.

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