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Non-surgical contraception in feral cats: Short term efficacy and safety of combined vaccination with anti-GnRH (GonaCon) and rabies vaccines

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Background: Overpopulation of stray cats is a major problem due to negative impacts on animal welfare, public nuisance and health, as well as possible harm to wildlife. Surgical sterilization is commonly used to prevent breeding; however, it has practical disadvantages and usually does not adequately implemented in a sufficient large-scale in field conditions. Therefore, attempts are made to develop non-surgical contraception/sterilization methods. Rabies is a deadly virus which may infect people and animals. Our objective was to examine the short-term safety and efficacy of anti-GnRH vaccine (GonaCon), combined with rabies vaccine.

Methodology & Study Design: Mature feral female cats were divided into the following groups: (I) GonaCon-rabies: vaccinated with GonaCon and rabies (n=5); (II) GonaCon2-rabies: vaccinated twice with GonaCon (3w apart) and with rabies (n=4); (III) OVX-rabies: vaccinated against rabies and underwent ovariectomy (n=4); (IV) Intact-rabies: vaccinated against rabies and remained intact (n=3). Cats were monitored and sampled every two weeks for 14 weeks. Data analyzed by repeated-measures ANOVA or Fisher exact test.

Results: There were neither systemic nor local adverse reactions at vaccination sites. Blood tests analyses revealed no differences among groups. There were no differences in the level of serum rabies antibodies among groups, and cats kept a protective antibodies titer (>0.5 IU/ml) starting at 2-4 weeks after vaccination. Anti-GnRH antibodies were detected in all GonaCon vaccinated cats, except for one cat in the GonaCon2-rabies group, which did not develop any anti-GnRH antibodies titer. Vaginal cytology and hormonal analyses support the effectiveness of GonaCon. The results of this study support the conclusion that in the short term, the combined vaccination with GonaCon and rabies is safe and effective. It also showed that there was no influence of the GonaCon vaccine on the rabies vaccine response and vice versa; however, further long-term studies are warranted before this regimen can be widely recommended.

Recent Publications

1. Gunther I, et al., (2016) Feeders of free-roaming cats: personal characteristics, feeding practices, and data on cat health and welfare in an urban setting of Israel. *Frontiers in Veterinary Science* 3:21.
2. Gunther I, et al., (2016) Nuisances and welfare of free-roaming cats in urban settings and their association with cat reproduction. *Preventive Veterinary Medicine* 119(3-4):203-10.
3. Adin C, A et al., (2011) Complications of ovariectomy and orchietomy in companion animals. *Veterinary Clinics of North America-Small Animal Practice* 41(5):1023-39.
4. Burrow R, D Batchelor and P Cripps (2005) Complications observed during and after ovariectomy of 142 bitches at a veterinary teaching hospital. *Veterinary Record* 157(26):829-833.
5. Levy J K, et al., (2011) Long-term fertility control in female cats with GonaCon (TM), a GnRH immunocontraceptive. *Theriogenology* 76(8):1517-1525.

Biography

Tal Raz is a Reproductive Biologist and a Theriogenologist at the Koret School of Veterinary Medicine (KSVM), Hebrew University, Israel. In 2002, he graduated as a DVM from KSVM, Hebrew University. In 2004, he began a three-year Theriogenology Residency Program in Animal Reproduction at the Western College of Veterinary Medicine, University of Saskatchewan, Canada, and in 2007, he became a Diplomate of the American College of Theriogenologists (ACT). In 2010, he completed his PhD in Animal Reproduction at the University of Saskatchewan, Canada, and thereafter conducted a Post-doctoral fellowship at the Weizmann Institute of Science, Israel. Since 2013, he is a Faculty Member and Researcher at the Koret School of Veterinary Medicine, Hebrew University. His current research is focused on the association between animal welfare and the reproductive system, the development of non-surgical sterilization methods, as well as the physiology and pathology of the female reproductive system.

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