SESSION OVERVIEW

Chair: Dr. Cheryl Asa
Speakers: Dr. Ana Cristina Carranza-Martin, Dr. Sandra Goericke-Pesch, Marjie MacGregor, Dr. Iris Reichler

GNRH AGONISTS AND ANTAGONISTS: LABORATORY AND FIELD LEARNING

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GnRH agonists were not originally thought to be appropriate or adequate for feral cat and dog sterilization, because they're considered to be reversible. However, contraceptive reversibility is what zoos require in their breeding programs. Suprelorin®, which contains the GnRH agonist deslorelin acetate in a slow-release implant, has been the product of choice for use in carnivores, including wild felids and canids, for more than 15 years.

Although the two Suprelorin formulations are effective for a minimum of 6 or 12 months, respectively, results from more than 1000 individual zoo animals have shown that duration of efficacy can be much longer, sometimes for 4 to 5 years following a single treatment.

This extreme variability in time to reversal, though, means that the product may find practical application in stray dogs and cats. Especially since the lifespan of feral animals can be considerably shorter than occurs in owned animals, preventing reproduction for even a few years could have an effect at the population level.

The presentations in this session consider factors associated with GnRH agonist use that are relevant to development of a method for stray dog and cat population control. They consider various aspects of dosage, age at first treatment, and potential side effects.

Dr. Carranza-Martin presented results from her study using 1.6 mg deslorelin acetate in both male and female prepubertal domestic cats. Two of 12 treated cats underwent puberty along with control cats, but none of the treated cats proved to be fertile when mated. No differences in growth parameters were found and no clinical or behavioral side effects were observed.

Dr. Goericke-Pesch discussed the variability in response of both males and females. In addition to treatment for fertility control, GnRH agonists can be used in males with androgen-related condition, e.g., benign prostate hyperplasia and behavioral problems. However, effects on testosterone and spermatogenesis can be variable and even delayed in some individuals. In females, the incidence of estrus induction is lowest when progesterone is high, and thereafter duration of efficacy varies widely among individuals, but can be up to 3 years.

Dr. Reichler presented the results of a retrospective study of deslorelin acetate use in 102 female dogs.

Inhibition of estrus induction was most successful in females treated during metestrus, before puberty or when given exogenous progestagen. However, progestagen or endogenous progesterone did not prevent estrus in all cases. Higher doses led to prolonged reproductive suppression and suppression was more successful in younger dogs. Of concern were cases of uterine pathology that in some individuals, which may make deslorelin inappropriate for use in female dogs.

Ms. MacGregor discussed a different approach, using coyotes as a possible model for dogs for testing a very high dose (10 times typical dose) of deslorelin acetate in an attempt to achieve permanent sterilization with a single treatment. Two years into the long-term study, full suppression, evidenced by complete absence of sperm and virtually undetectable testosterone, continues. Blood chemistry and body composition measures have detected no difference from control coyotes.

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These studies contribute to the growing body of literature on the effects of GnRH agonists in both dogs and cats. Results at present indicate that GnRH agonists may be suitable for preventing reproduction in male dogs and in both male and female cats. Questions remain about the optimal dosage and age of treatment to achieve the longest duration of contraception.