The use of a canine GnRH vaccine for behavior modification in cats
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Introduction

It is estimated that four to five million cats enter U.S. shelters each year, and more than half of these animals are euthanized because there are not enough homes for them or because of behavioral reasons that result in relinquishment. Inappropriate elimination and aggression towards other cats in the household are two reasons given for relinquishment.1 We hypothesized that persistently elevated luteinizing hormone (LH) concentrations after gonadectomy are responsible for these behaviors. The objective of this study was to determine the safety and efficacy of a canine gonadotropin releasing hormone (GnRH) vaccine for the purposes of LH suppression and behavior modification.

Keywords: Aggressive behavior; cat; GnRH; inappropriate urination; vaccine

Methods

Three 5-year-old, privately-owned male neutered cats (two domestic short-haired (DSH) cats, one Bengal cat) were used for this study. The GnRH vaccine (Canine Gonadotropin Releasing Factor Immunotherapeutic®; Pfizer Animal Health) was administered twice by subcutaneous injection eight weeks apart. Vaccination sites were inspected and palpated for swelling by the owners of the cats for one week after vaccination. Venous blood samples (2 mL) were collected prior to each immunization and every eight weeks thereafter for six months. Semi-quantitative LH concentrations were determined using the WITNESS® LH test kit (Synbiotics, Kansas City, MO), which is commonly used for diagnosing the presence or absence of retained ovarian tissue in queens. Antibodies against GnRH were determined using an ELISA and titers were compared using ANOVA (Stata V.12, Statacorp, College Station, TX). Significance was defined as p<0.05.

Results

Following vaccination, cats showed mild discomfort at the injection site. This was prevented with an injection of carprofen administered at the time of the booster injection. No other side effects were reported. The two DSH cats displayed decreased frequency of inappropriate urination following the second vaccination. However, the aggressive behavior displayed by the Bengal cat towards the other household cats did not subside following vaccination. All cats had a positive LH test result (LH ≥ 1ng/mL) at 0 and 8 weeks, which became negative (LH < 1 ng/mL) at 16 and 24 weeks. All developed GnRH antibody titers, which were significantly higher at weeks 8 and 16 compared to weeks 0 and 24.

Conclusion

These results indicate that a GnRH vaccine labeled for the treatment of benign prostatic hyperplasia in dogs is probably safe in cats and may be effective in treating inappropriate urination in adult male neutered cats.

Reference


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