Use of a commercial GnRH vaccination for mismating in bitches
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The objective of this study was to evaluate the use of a commercial GnRH vaccine in bitches to cause luteolysis as a potential mismating treatment. The hypothesis was that vaccination would cause GnRH antibody production resulting in diminution of LH and subsequent luteolysis. Nine bitches were vaccinated with an anti-GnRH (cGRF)vaccine (1 mL SQ, Canine Gonadotropin Releasing Factor Immunotherapeutic®, Pfizer Animal Health, New York, NY) after confirming ovulation based on a progesterone level of >5 ng/mL (Day 0). A booster vaccination was given on Day 14. Blood was collected via jugular venipuncture on days 0, 14, and 28. Progesterone levels were evaluated on Day 0 using a chemiluminescent enzyme immunoassay (Immulite®; Siemens Medical Solutions Diagnostics, Deerfield, IL) and on samples from days 14 and 28 using radioimmunoassay (Coat-A-Count Progesterone In-vitro Diagnostic Test Kit, Diagnostic Products Corporation, Los Angeles, CA). Chemiluminescent enzyme immunoassay was used on Day 0 so same-day results could be obtained for timely vaccination. Progesterone levels confirmed the presence of functional luteal tissue on day 14 and luteolysis (indicated by progesterone levels <2.0 ng/mL) had occurred in all cases by Day 28 (p=0.0020). Interestrus intervals were not affected by vaccination. Side effects of vaccination were minor and involved mild erythema at the injection site which resolved without treatment. In addition to these nine bitches, a tenth bitch presented to the Virginia-Maryland Regional College of Veterinary Medicine one day after a mismating occurred. Her progesterone level was 5.0 ng/ml. She was vaccinated with 1 mL SQ of cGRF followed by a booster 14 days later. At 32 days, an ultrasound examination confirmed she was not pregnant and her progesterone level was 0.565 ng/ml. Based on these findings, the cGRF vaccine appears to be useful as an alternative to current mismating treatment options without significant side effects. This study is on-going and subsequent estrous cycles are currently being evaluated to determine if bitches have ovulatory estrous cycles following vaccination.

Keywords: Mismating, luteolysis, canine, GnRH, vaccine