Effect of deslorelin implants on domestic queen puberty: a preliminary report
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Prolonged administration of GnRH agonists acts through desensitization and down-regulation of the GnRH pituitary receptors. However, this procedure is initially preceded by an increased release of gonadotrophins which, in females, can result in an estrous response. Long-term release GnRH agonists have shown to postpone puberty in boys, although their effect on feline puberty has not been assessed. We hypothesized that the long term release GnRH agonist, deslorelin acetate, postpones puberty in queens without the initial stimulation of the gonadal axis, when administered when the cat is at approximately 50% adult body weight. The aim of this study was to assess the efficacy and safety of deslorelin acetate implants on domestic queen puberty postponement.

Thirty 90 to 180 day old, 1.3 to 1.6 kg prepubertal crossbred female cats were included in this study during a year and one-half period. Five of the cats (17%) were littermates. The animals were kept under a positive photoperiod (14L:10D) since birth, and after weaning they were fed a commercial kitten food and given water ad libitum. The study was approved by the Faculty Institutional Care and Animal Use Committee.

The females were randomly assigned to one of the following groups: deslorelin acetate 5 mg SC implants (Ovuplant®, PepTech Animal Health, Macquarie Park, NSW, Australia; n=15) or to a non-treated control group (n=15).

The queens were followed up daily and weighed weekly until puberty. Vaginal cytology was also carried out three times a week or whenever estrous signs appeared. Puberty was diagnosed by the presence of the typical estrous behavior in the presence of a tom cat and vaginal cytology. Age (days) and weight (kg) at puberty (mean±SEM) were compared between groups by Student’s t-test. The level of significance was set at 0.05.

Age but not weight at puberty differed between deslorelin-treated and control groups, respectively (237.8±14.1 vs. 177.8±10.8; P<0.01 and 2.6±0.1 vs. 2.56±0.1; P>0.1). Two deslorelin-treated queens developed pyometra 13 and 92 d after implantation, respectively. The remaining animals did not have any side effects.

At the time of writing, four deslorelin-treated, 251±20 days old, cats have not reached their puberty yet; these animals already differ from control queens (P<0.01). Another female of the same group did not achieve puberty after implantation 18 months ago, this cat was considered an outlier and excluded from the previous analyses.

It was concluded that these deslorelin implants administered at this particular body weight range seemed to postpone (≥ 6 weeks) feline puberty without altering growth. Although side effects were low (<15%), they should be considered when using these implants.

Key words: Cat, deslorelin, feline, GnRH agonist, puberty

Reference