EFFECT OF A GNRH AGONIST IN IMMATURE DOMESTIC CATS

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Continuous administration of gonadotropin-releasing hormone (GnRH) agonists desensitizes and down-regulates pituitary GnRH receptors, which, in turn, causes gonadotrophin depletion. It was hypothesized that in cats, as in other mammals, GnRH agonists, administered at a "critical postnatal period" may adversely impact reproductive development and adult reproductive function. To assess the effect and clinical safety of postnatal administration of a long term release GnRH agonist on male and female domestic cats, 27 half or full sibling postnatal (within 24 h after birth) kittens were randomly assigned to receive an implant of deslorelin acetate 1.6 mg SQ (n=14; 7 males and 7 females) or placebo (n=13; 6 males and 7 females) during a period of 63 weeks. The cats were clinically and endocrinologically followed until puberty or to the time of the writing of this abstract. Pubertal cats were administered *in vivo* fertility tests and then gonadectomized. The frequency of cats that underwent puberty, demonstrated fertility and adverse side effects, if any, were compared between groups by Fisher Exact Test. Estradiol and testosterone fecal concentrations, body measurements and scrotal volume were analyzed by ANOVA for repeated measures. The level of significance was set at $p < 0.05$. Two deslorelintreated (2/14) and one placebo treated (1/13) animals are $\leq$ 12 weeks of age and, therefore, not included in the statistical analysis. Twelve of the placebo (12/12; [mean age 14.5 weeks]) and two of the deslorelin (2/12; [mean age 48.5 weeks]) treated cats (1 male and 1 female) underwent puberty ($p < 0.1$). The remaining non-pubertal deslorelin-treated animals (10/12) are 13 to 63 weeks of age. No deslorelin (0/12), but all of the placebo (12/12) treated cats were demonstrated fertile at mating ($P<0.01$). No significant differences were found in body weight, withers height or body length between groups throughout the study. Conversely, scrotal volume differed between placebo and deslorelin treated males during the trial ($p< 0.05$). Fecal estradiol 17-β differed ($p<0.01$) between groups until puberty. No clinical or behavioral adverse side effects were observed in any (0/27) animals. It is concluded that early prepubertal administration of a long-term release GnRH agonist caused infertility in these domestic cats. Further follow up of this study is under way.