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Control of reproduction in male cats with a 4.7 mg deslorelin implant (Suprelorin®)

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The aim of the study was to assess the effect of deslorelin implants on the spermatogenesis in male cats. Six sexually mature tomcats (4.5 ± 0.5 Kg) aged between 2 to 4 years, were housed in a conditioned room with alternated 2- month photoperiod cycles to maintain semen quality. Tomcats were randomly assigned to one of two treatments. Three cats (n=3) received a deslorelin implant (TRT; 4.7 mg; Suprelorin®, Virbac, France) whereas three (n=3) received any implant (CON). Semen samples were collected by electroejaculation according to the technique described by Howard^[1]^, and were taken every 4 weeks since 16 weeks before treatment (pretreatment samples) until 80 weeks post-implant insertion (PI). Each semen sample was collected and immediately assessed for motility, velocity, volume, sperm concentration, total sperm count, viability, acrosome integrity, plasma membrane integrity and sperm morphology. After electroejaculation, testis size (including scrotal skin) was measured to calculate testicular volume (TVO), and visual examination of the penis was performed to evaluate penis spines. Additionally, blood sample was taken to measure serum testosterone (T2) concentrations by electrochemiluminescence immunoassay (Testosterone II, Elecsys, Roche®; Mannheim, Germany). Data were analyzed ANOVA using GLM procedure of SAS®.

For analysis, semen samples were divided into 3 periods (PER): PER1 = pretreatment + implant day samples; PER2 = 4 to 20 weeks PI, and PER3 = 21 to 80 weeks PI. All seminal parameters were similar in TRT and CON groups before the implant insertion (P>0.05). During PER2, treated cats, first rapidly increased sperm parameters due to the deslorelin stimulatory effect and latter decreased. In PER3, some sperm parameter such as acrosome integrity, plasma membrane integrity, and sperm morphology were no measured in TRT tomcats due to very small volume and concentration of ejaculate compared to control group (0.025 ± 0.006 vs 0.08 ± 0.008 mL and 0.59 ± 0.48 vs 41.31 ± 14.14 x10^6 /mL respectively; P<0.05). Conversely, CON group showed no differences during the study period (2980.59 ± 203.20 mm³).

Penile spines decreased in treated cats by 8 weeks PI. Twenty weeks PI, two cats showed total absence of penile spines while the other showed almost complete atrophy during the rest of the study. Serum testosterone concentrations (ng/mL) significantly decreased to basal levels 4 weeks PI in all treated cats, and remained basal during the rest of the study (PER2, 0.03 ± 0.21; PER3, 0.28 ± 0.24 vs PER1, 2.81 ± 0.38). Like previous studies^[2]^, our results show that a single Suprelorin® 4.7 mg implant suppress hypothalamic-pituitary-gonadal axis in tomcats for at least 80 weeks. Thus, deslorelin implants proved to be a long lasting option to control reproduction in tomcats. Further studies are necessary to confirm the duration of this suppression and the pattern of return to initial sperm values.
