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Is it necessary to remove the implant when inducing oestrus in bitches with the 4.7 mg deslorelin SC implants Suprelorin®?

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The use of deslorelin to induce a fertile oestrus in bitches has been demonstrated [1]. The removal of the implant has been advertised due to the negative effect of prolonged use of deslorelin on the secretion of LH (luteotropic) leading ultimately to failure of pregnancy in the bitch as suggested by Kutzler et al [2]. The objective of the study was to evaluate the effect of removing the implant at different times, during pro-oestrus or oestrus and during pregnancy.

Materials and methods: 23 anoestrous Beagle bitches aged 2 to 6 years old were selected. The last oestrus occurred 6 to 8 months before the study. The bitches were assigned randomly to 3 groups according to the treatment scheme. Bitches were SC implanted with a 4.7 mg deslorelin implant (Suprelorin®) in the post-umbilical area, except for the control group (Group C, n=3). The removal of the implant was done in Group A (n=14) during pro-oestrus or oestrus and in group B (n=6) during pregnancy. Oestrus was observed three times per week. Once the females were in oestrus they were placed with a fertile male once a day for 5 consecutive days. Pregnancy diagnosis was done by ultrasound examination between 18 to 25 days post-mating and was repeated one week later. Sera samples were collected and frozen 3 times per week in each bitch from the beginning until the end of the study, for further quantitative progesterone assays (Elecsys 2010, Roche, Germany).

Results: oestrous signs were observed 6.5 +/- 2.7 days after implantation. All bitches ovulated except one bitch in Group A. The time from implantation to ovulation was for group A: 13.8 ± 2.5 (n=13) days and for group B: 12.8 ± 1.0 days (n=6). In Group C ovulation occurred 9, 11 and 17 days after heat detection. Pregnancy rates were 10/14 (71.4%-Group A), 5/6 (83.33%-Group B) and 3/3 (100%) and the number of puppies per pregnancy (prolificacy) was 6.4 ± 2.0; 5.5 ± 2.1 and 8.0 ± 1 for Group A (n=10), B (n=2), C (n=3) respectively. In group B, only 2 pregnancies went to term, and in both bitches the implant had been removed during pregnancy respectively 29 and 43 days post-ovulation, one bitch was not pregnant on ultrasound and the other 3 gestations were lost during the last third of pregnancy. Progesterone assays in these 3 bitches suggested a luteal insufficiency (progesteronemia at the time of pregnancy arrest was respectively 0.07, 3.31 and 1.41 ng/ml).

Discussion: In treated bitches, the rate of ovulation (13/14 bitches) was high, but comparable to litterature [1]. The pregnancy loss in 3 bitches from group B and the fact that in the same group the only 2 bitches that went to term had implants removed during pregnancy tend to demonstrate the need of implant removal to allow gestation to go at term. Indeed, as suggested by Kutzler et al [2]. The presence of the implant might affect the support of the CL by LH, most likely due to the desensitization of the pituitary GnRH-receptor with a suppression of synthesis of the LH and FSH [3]. Deslorelin is a reliable method of oestrous induction in dogs, with good ovulation and pregnancy rates. The implant should be removed preferably during oestrus to guarantee the maintenance of pregnancy.