ABSTRACTS

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Efficacy of use of cloprostenol or aglepristone at 21-22 d of gestation for pregnancy termination in queens

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INTRODUCTION: Termination of unwanted pregnancies in the queen can be achieved by using cabergoline alone or in combination with prostaglandin F2α (1-3). However, to our knowledge, there are no reports of use of cloprostenol for termination of unwanted pregnancies in felines. In queens progesterone is secreted from corpora lutea until day 25-30 of gestation and decreases slowly afterward (1). Therefore, cloprostenol could be used around days 21-22 of pregnancy to induce luteolysis and terminate unwanted pregnancies in queens. The aim of the study was to assess the clinical and reproductive efficacy of cloprostenol or aglepristone at 21-22 d of gestation to terminate pregnancy in queens. The hypothesis was that cloprostenol or aglepristone could effectively terminate 21-22 days pregnancies in queens.

MATERIALS AND METHODS: Eighteen mixed breed queens, aged between 12 and 14 month and weighing between 2 and 4 kg, were used in a randomized design. In addition, two 3-year-old intact tom cats were included in the study for breeding. The queens were housed alone in stainless steel cages and were fed commercial cat food (Fit 32®; Royal Canin, Buenos Aires, Argentina) and water ad libitum. The toms were housed separately and fed the same diet. All animals were maintained in a controlled environment with artificial incandescent illumination (14 h of daily bright light). Animal care, housing, and experimentation complied with the International Guiding Principles for Biomedical Research Involving Animals (4). At estrus each queens were housing with the tom. After first mating pregnancy was confirmed by transabdominal ultrasonographic examination using an ultrasound scanner equipped with a 5-7.5-10 MHz linear transducer (Mindray™, DP-6600 Vet; Nanshan, China). On days 21-22 of pregnancy, queens were divided in three groups (G). In G 1 six animals received 10 mg/kg aglepristone (Alizin®, Virbac, Germany, ALI, sc, n=6) on two consecutive days. In G 2 animals received 5 μg/kg cloprostenol (Ciclar, p.a.®, Zoovet, Argentina, CLO, sc, n=6). In G 3 animals received 1 ml of saline solution (PLA, sc, n=6). After treatment females were daily monitored by ultrasonography during 10 days and weekly until end of gestation. During each ultrasound examination, the length (LEN, mm), anterior-posterior (AP, mm), and width (WID, mm) dimension of each gestational sac (GS) were measured. The GS volume (GSV, mm³) was calculated using the ellipsoid shape formula (4/3 π * [GSAP/2] * [GSAP/2] * [GSTRV/2]) and GS diameter (GSD, mm), was calculated as the mean of the three measurements of the GS. The number of fetuses (NFET), days of gestation (DG), days from treatment to termination of pregnancy (DTP), and the GS measurements, were analyzed by the GLM and MIXED procedures of SAS; while the success or failure to terminate pregnancy (0-1) and the presence of vulvar discharge (1-5) by the GENMOD procedure of SAS (5). Data are presented as LSM ± SEM. Significance was defined as P < 0.05.

RESULTS: While all queens treated with ALI terminated pregnancy (6/6, 100%), none of treated with CLO (0/6, 0%) and with PLA (0/6, 0%) terminated pregnancy (P<0.001). The interval from treatment to first signs of pregnancy termination in the ALI group was significantly shorter to the interval from treatment to the end of a normal pregnancy in the CLO and PLA treated queens (4.1±0.6 vs. 42.5±8.6 d, p<0.001). The average days of gestation for queens with normal pregnancy were similar in PLA and CLO groups (63.8±0.6 d, P>0.20). The number of GS at the beginning of the study were similar among treatments across days of gestation (interaction of treatment by day of gestation; P<0.01). Whereas in the group of queens that pregnancy was terminated (ALI), all GS and fetal measurements did not increased or decreased after treatment; in the groups with normal pregnancy (PLA and CLO) GS and fetal measurements continued to increase during the next 10 day after treatment (P<0.01). After cloprostenol administration, animals showed vomiting and depression for 30 minutes. In ALI G no side effects were observed.

DISCUSSION: Contradicting our hypothesis, cloprostenol was not effective to induce abortion in queen at days 21-22 of pregnancy. On the contrary, aglepristone was effective to induce abortion in queen at days 21-22 of pregnancy. Whereas previous reports have shown that aglepristone was effective in the queen to terminate pregnancy on days 25-26 without side effects (2,3), to our knowledge, this is the first study to report the lack of efficacy of cloprostenol to induce abortion in the
queen. This lack of efficacy could be explained by having used a dose not high enough to induce luteolysis of by an earlier luteotrophic support of prolactin to the corpora lutea rescuing the CL from the luteolytic doses of cloprostenol. Previous studies using cloprostenol in combination with cabergoline were successful to induce abortion by day 30 of pregnancy (6).

CONCLUSION: The results from this study indicate that cloprostenol is not effective but aglepristone is effective to induce abortion in queens at 21-22 days of pregnancy. Whether an alternative treatment plan that includes lower and repeated daily and increasing doses of cloprostenol to reduce side effects is effective to terminate pregnancy in the queen needs further investigation.

(1) Erünal-Maral N, Aslan S, findik M, Yüksel N, Handler Johannes, Arbeiter K. Induction of abortion in queens by administration of cabergoline (Galastopt™) solely or in combination with PGF2α analogue Alfiaprostol (Gabbrostim™). Theriogenology 2004; 61:1471-1475.