

USE OF THE GnRH ANTAGONIST, ACYLINE, ON ESTROUS CYCLE INTERRUPTION IN THE BITCH: A PRELIMINARY REPORT

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Efficacious, safe and reversible, estrous cycle interruption is sometimes required in bitches intended for both breeding and work or show. GnRH antagonists competitively block GnRH receptors sites at the pituitary gland, exerting an immediate inhibitory effect on the gonadal axis. Acyline is a third generation GnRH antagonist that has been found to be safer and more effective at suppression and maintenance of suppression of gonadotrophins than earlier compounds. It was therefore the aim of this study to test the efficacy and safety of acyline on canine estrous cycle interruption in randomized placebo controlled trial.

Twelve healthy cross and pure-bred early proestrous (≤ 3 days) bitches, were randomly allocated to one of the following pharmacological protocols: acyline (ACY, $n = 6$) 110 $\mu\text{g}/\text{kg}$ SC or placebo (PLA, $n = 6$) which were administered the corresponding equal volume of bacteriostatic water SC. The bitches were followed up daily by clinical and vaginal cytology examination for 30 days after injection. Proestrous interruption was defined as the first day that vulva softened and vaginal discharge significantly decreased. Eventual presence of local and systemic side effects were also assessed. Blood samples for progesterone (P_4) determinations were collected on day 12 to test ovulation ($P_4 > 2 \text{ ng}/\text{ml}$). Days to the onset of the next estrous cycle after treatment were recorded.

In all ACY bitches vulvar size significantly decreased their initial size losing turgidity within the first 36 h after injection. Vaginal discharge diminished to a minimal quantity becoming less bloody during the first 2 days. Mean $\pm$ S.E.M. time to interruption was 3 ± 0.6 days. Vaginal cytology quickly shifted from proestrous to estrus smears and then, around the week from treatment, to diestrus. None of the bitches of this group presented typical estrous behavior at any time and ovulation was absent. Return to estrous cycle occurred 19.7 ± 3.6 days after treatment. First cycle after treatment was normal in all the cases. Conversely, in the PLA bitches physical, behavioral and cytological proestrus slowly progressed to estrus and to an ovulatory diestrus according to the normal species parameters. They had not had their next cycle at the end of this trial. None of the bitches in both groups presented local nor systemic side effects.

In line with a first study with GnRH antagonists, an unique acyline application quickly interrupted proestrous, showing also to be safer than the first generation compounds. Although, cycle postponement was short, the bitches presented a remarkable synchronous return of normal cycle, which appears as an attractive breeding management tool not only in clinical situations but also when assisted reproduction techniques are to be applied. It is concluded that the GnRH antagonist, acyline, was an efficacious, safe, reversible drug to rapidly interrupt early estrous cycle in the domestic bitch.

Keywords: Bitch; GnRH antagonist; Acyline; Estrous cycle interruption