Use of cabergoline to treat primary and secondary anestrus in dogs

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Objective.—To determine whether cabergoline would be safe and effective for induction of estrus in dogs with primary or secondary anestrus.

Design.—Prospective case series.

Animals.—6 privately owned otherwise healthy pure-bred dogs with primary or secondary anestrus.

Procedure.—Dogs were treated with cabergoline (5 µg/kg [2.3 µg/lb], PO, q 24 h) until 2 days after the onset of proestrus. Follicular development was assessed by means of cytologic examination of vaginal smears; ovulation was assessed by measuring serum progesterone concentration 3 weeks after the onset of estrus. Five bitches were mated during behavioral estrus.

Results.—All dogs had normal estrus periods, and all 5 dogs that were mated whelped normal litters. Mean duration of cabergoline treatment was 16 days. None of the dogs had any adverse effects associated with cabergoline administration.

Conclusions and Clinical Relevance.—Results suggest that administration of cabergoline is safe and effective for treatment for primary and secondary anestrus in dogs. (J Am Vet Med Assoc 2002;220:1653–1654)

Abnormalities of the anestrus period are common in dogs. Persistent anestrus is classified as primary or secondary, with primary anestrus defined as a lack of estrus by 18 to 24 months of age, depending on the size of the bitch, and secondary anestrus defined as a lack of estrus within 12 months after the preceding estrus period.1

Treatment of primary and secondary anestrus should be directed toward identifying and treating the underlying cause. However, estrus induction may be attempted when an underlying cause is not found. Unfortunately, reliable protocols for induction of estrus in dogs have been difficult to devise because of a lack of understanding of the hormonal and follicular events responsible for termination of anestrus. Estrus induction traditionally has involved administration of gonadotrophic hormones or synthetic gonadotrophin-releasing peptides, which induce release of endogenous gonadotrophic hormones from the pituitary gland.5 Comparison of the efficacy of different hormonal pro-}

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charge); cabergoline was administered with food. Vaginal smears were collected daily from the onset of proestrus until the onset of diestrus and examined cytologically to follow follicular development. Five dogs were mated during behavioral estrus. Blood samples were collected 3 weeks after the onset of behavioral estrus, and serum progesterone concentration was measured to confirm ovulation (progesterone concentration, > 2 ng/ml).

The induced estrus period was considered normal if dogs had normal follicular development (determined by means of cytologic examination of vaginal smears) and ovulated (as evidenced by a serum progesterone concentration > 2 ng/ml). Number of days of treatment with cabergoline and any adverse effects were recorded.

Results
None of the dogs had any adverse effects during treatment with cabergoline, and all had normal estrus periods. Duration of the estrus period in the 4 dogs with secondary anestrus was similar to duration of the previous estrus period. Mean duration of treatment with cabergoline was 16 days (range, 4 to 34 days). In 3 dogs with secondary anestrus, the duration of treatment was short (4, 5, and 8 days), whereas in the remaining dog the duration was 28 days. In the 2 dogs with primary anestrus, duration of treatment was much longer (18 and 34 days). All 5 dogs that were mated during behavioral estrus became pregnant and whelped normal litters.

The Pekingese with primary anestrus had previously been examined by a dermatologist because of vulvar fold dermatitis secondary to hypoplasia of the vulva. In this dog, the vulva increased in size following treatment with cabergoline, and this change persisted following discontinuation of administration, permitting resolution of the dermatitis.

Discussion
Results of the present study suggest that administration of cabergoline is a safe and effective treatment for primary and secondary anestrus in dogs. Mean duration of treatment in these dogs was similar to duration in previous studies involving administration of cabergoline to healthy bitches. As with previous studies involving healthy bitches, cabergoline administration resulted in a normal estrus period. The reason why duration of treatment was relatively short in 3 dogs in this study and longer in the remaining 3 could not be explained, although breed and individual differences in response to treatment could possibly have played a role.

None of the dogs in the present study had any adverse gastrointestinal effects associated with cabergoline administration, whereas dogs in previous studies had mild adverse effects. Administration of cabergoline with food may account for the lack of adverse effects in the present study.

Although this treatment should be tested in a larger number of dogs with persistent anestrus, results of the present study suggest that it is a promising tool for improving reproductive performance in dogs.

References