The Haryana Veterinarian (June, 2025) **64(1),** 7-9 ISSN 0033-4359 (P) **Research Article**

EFFICACY OF CABERGOLINE TREATMENT FOR INDUCING ESTRUS IN ANESTRUS MUDHOL HOUND BITCHES

M.R. HADIMANI*, S. HANDAGE, V. DODDAGOUDAR, S.K. KONDAGULI, A.B. MALI and D. JAMADAR
Canine Research and Information Center (Mudhol Hound), Timmapur, Mudhol, Dist. Bagalkot-587313
Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar-585-401, Karnataka

Received: 31.03.2024; Accepted: 27.05.2024

ABSTRACT

The objective behind the study was to evaluate the impact of cabergoline for the treatment of anestrus in Mudhol hound (MH) bitches. Exfoliative vaginal cytology (EVC) was performed on 30 MH bitches between 1.5 to 8 years age and maintained at Canine Research and Information Center, Timmapur, Mudhol, Karnataka. Seven bitches were found to be in anestrus according to EVC and were selected for treatment with cabergoline at the dose rate of 5µg/kg body weight orally until two days following the onset of proestrual bleeding, or a maximum of 47 days. As a result, 5 bitches (71.43%) exhibited proestrual bleeding after mean of 38.6±4.5 days without exhibiting major adverse effects. The mean duration from start of the treatment to onset of proestrual bleeding was 35.2±6.7 days. The two bitches which did not respond to treatment were possibly in primary anestrus. All the five bitches after exhibiting estrus as confirmed by EVC were bred to elite MH male dogs. All the bitches conceived with the 100% pregnancy rate and whelped with litter size ranging between 1-7 pups. Thus, cabergoline is a promising drug for managing anestrus in MH bitches and thereby enhancing reproductive outcomes in this breed.

Keywords: Anestrus, Cabergoline, Mudhol hounds

How to cite: Hadimani, M.R., Handage, S., Doddagoudar, V., Kondaguli, S.K., Mali, A.B. and Jamadar, D. (2025). Efficacy of cabergoline treatment for inducing estrus in anestrus Mudhol hound bitches. *The Haryana Veterinarian* **64(1)**: 7-9.

Canine breeding is a rapidly evolving industry and there is influx of exotic breeds of dogs into India for breeding motives (Singh *et al.*, 2019). Mudhol hound is one among the three registered Indian dog breeds. It is a sturdy dog and a keen sight hound. They are known for hunting, guarding and even racing. The estrus cycle ranges from 8 to 12 months. Though they breed throughout the year, breeding is more pronounced during winters. A healthy Mudhol hound has anestrus period ranging from 4 to 5 months. The prolongation of anestrus period beyond this is considered abnormal. Abnormal anestrus is classified as primary and secondary anestrus. The bitch is considered to be in primary anestrus if she does not exhibit any estrus until she attains 24 months of age, and secondary anestrus if she does not exhibit estrus within 10-18 months from the previous estrus phase (Nak *et al.*, 2012). Cabergoline is a drug used in bitches to shorten the anestrus period or to treat infertility caused by anestrus. Cabergoline is a dopaminergic ergot alkaloid with an anti-prolactinergic effect (Rains *et al.*, 1995). Cabergoline is indicated at a dose of 5 µg/kg body weight to promote estrus in dogs and has been shown to be effective at lower doses (0.6 µg/kg) (Cirit *et al.*, 2007).

MATERIALS AND METHODS

The study was carried out for a period of 3 months during June to August 2022 at Canine Research and Information Center, Timmapur, Mudhol, Karnataka. Exfoliative vaginal cytology (EVC) was performed on 30 Mudhol hound bitches, and the cases with EVCs showing 80-90% parabasal cells and 10-20% intermediate cells were inferred as anestrus. Total seven dogs in anestrus (N=7) between 1.5 to 8 years of age were selected and treated with a daily oral dose of cabergoline at the rate of 5 µg/kg body weight. The treatment was given upto two days following the onset of proestrual bleeding or for a maximum duration of 47 days. The EVC was performed every third day during the treatment duration to assess the progress of the treatment and then every second day after the proestrual bleeding until 80% superficial and anuclear/cornified cells were observed (Fig. 1). The dogs were in estrus at this point and were mated with elite Mudhol hound males (Fig. 3). Thus, the effect of cabergoline in inducing estrus in Mudhol hounds was studied.

RESULTS AND DISCUSSION

The onset of proestrus, conception and litter size in 7 treated bitches is presented in Table 1. Five bitches out of seven (71.43%) exhibited proestrual bleeding within 1 to 53 days from the start of the treatment. The mean duration from the start of treatment to onset of proestrual bleeding was 35.2±6.7 days. The mean duration of treatment was 38.6±4.5 days. The length of treatment days in the current study is possibly high as most of the bitches were in early anestrus (The previous estrus observed was: two bitches were in primary anestrus, 4 bitches: 90-110 days before the start of treatment and 1 bitch :130 days before the start of treatment). The two bitches which did not respond to treatment were in the age group of 1.5 to 2.5 years and were

*Corresponding author: manjularh90@gmail.com

Fig. 1. EVC of bitch in Estrus showing ≥80% cornified and superficial cells

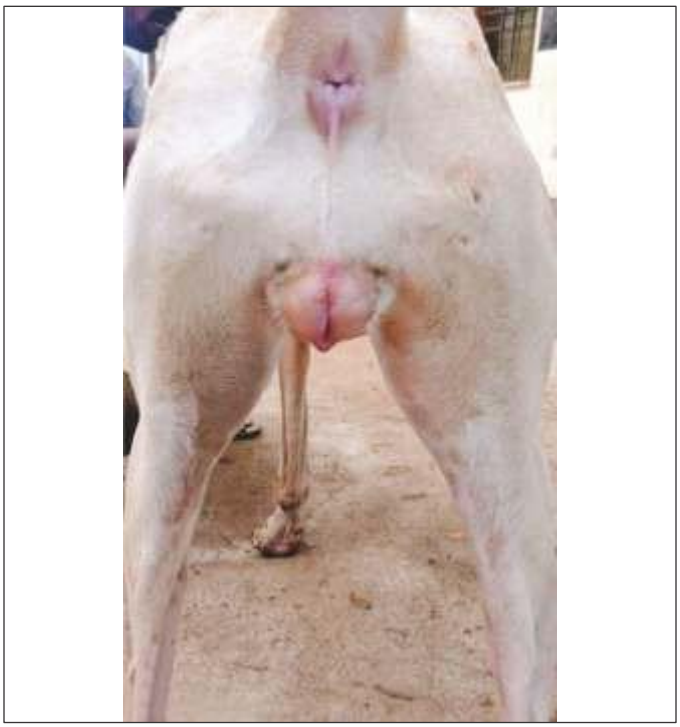

Fig. 2. Bitch exhibiting estrus symptoms

Fig. 3. Mating of bitch in estrus with elite male dog

Fig. 4. Bitch with the litter after whelping

Table 1. Onset of proestrus, conception and litter size in treated dogs

Bitch no.	Age (in years)	Treatment duration (days)	Interval from onset of treatment to start of proestrus (days)	Conception	Litter size
1	3	47	53	+	1
2	8	32	31	+	3
3	6.5	16	14	+	7
4	6.5	47	46	+	6
5	2	34	32	+	7
6	1.5	47			
7	2.5	47			
Mean±SEM	4.3±1.0	38.6±4.5	35.2±6.7		4.8±1.2
SD	2.6	12.0	15.1		2.7

in primary anestrus. Primary anestrus is common in bitches in the age group of 2-3 years because some large breeds of dog may not begin to cycle until 24 months of age and while some small breeds may experience several silent

heat cycles before exhibiting an obvious cycle (Sridevi, 2015). Two bitches exhibited signs of vomition on 2nd day of treatment but not thereafter. This is in line with the findings of Verstegen *et al.* (1999) who observed repeated vomition after treatment with cabergoline in one of the treated bitches. Cabergoline is reported to have adverse effects like vomition and hair discoloration (Mogheiseh *et al.*, 2017). Five bitches expressed estrus signs (Fig. 2) with EVC indicating ≥80% anuclear and superficial cells together with few or no RBCs, no neutrophils, no bacteria (Fig. 1) and were bred toelite male dogs on day 2, 4, and 6 of estrus period. All the five bitches conceived indicating a 100% pregnancy rate and whelped with litter size ranging between 1-7 pups (Fig. 4). The observed conception rate in the present study is in agreement with Bisen *et al.* (2022) who reported 100% pregnancy but higher than that (66.67%) observed by Smitty *et al.* (2019). The mean litter size was 4.8 which is lower than the findings of Smitty *et al.* (2019) i.e. 6.25±1.75 and Bisen *et al.* (2022) i.e. 5.2± 0.97. Litter size may also be attributed to genetics, breed, age, parity, nutrition and time of mating.

CONCLUSION

In this study, cabergoline effectively induced estrus in 71.43% anestrus Mudhol hound bitches, following a mean duration of treatment for 38.6±4.5 days. Notably, primary anestrus in younger bitches may explain non-responsiveness. Despite minimal adverse effects, all successfully induced females exhibited 100% pregnancy and whelped with a mean litter size of 4.8 pups. This research highlights cabergoline as a promising tool for managing anestrus in Mudhol hound bitches, emphasizing its potential role in enhancing reproductive outcomes in this breed.

REFERENCES

Bisen, A., Shukla, S.N., Baghel, R.P.S. and Mishra, A. (2022). Induction of estrus and fertility response using bromocriptine, cabergoline and eCG plus hCG treatment protocols in female dogs. *Indian J. Anim. Res.* **56(12)**: 1462-1467.

Cirit, U., Bacinoglu, S., Tas, M. and Alkan, S.E.R.H.A.T. (2007). Use of a decreased dose of cabergoline to treat secondary anestrus in bitches. *Bull. Vet. Inst. Pulawy.* **51(1)**: 43-46.

Mogheiseh, A., Ghiri, M.J.M. and Bandarian, E. (2017). The clinical follow-up of estradiol benzoate priming during induction of estrus with cabergoline in dogs. *Top. Companion Anim. Med.* **32(1)**: 16-19.

Nak, D., Nak, Y. and Simsek, G. (2012). Comparison of the use of cabergoline and gonadotrophin to treat primary and secondary anoestrus in bitches. *Australian Vet. J.* **90(5)**: 194-196.

Rains, C.P., Bryson, H.M. and Fitton, A. (1995). Cabergoline: a review of its pharmacological properties and therapeutic potential in the treatment of hyperprolactinaemia and inhibition of lactation. *Drugs*. **49**: 255-279.

Singh, G., Dutt, R., Kumar, S., Kumari, S. and Chandolia, R.K. (2019). Gynaecological problems in she dogs. *The Haryana Veterinarian* **58(SI)**: 8- 15.

Smitty, J., Jayakumar, C., Kurien, M. and Metilda, J. (2019). Shortening of interoestrous interval (IEI) in dogs using low dose cabergoline at early anoestrus. *Pharma. Innov.* **8(3)**: 375-377.

Sridevi, P. (2015). Canine Reproduction: The Theory and Practice: 1-229.

Verstegen, J.P., Onclin, K., Silva, L.D.M. and Concannon, P.W. (1999). Effect of stage of anestrus on the induction of estrus by the dopamine agonist cabergoline in dogs. *Theriogenol.* **51(3)**: 597-611.

CONTRIBUTORS MAY NOTE

- Research/Clinical articles are invited for next issue from the Scientists/Veterinarians engaged in Veterinary Profession.
- Please follow strictly the format of 'The Haryana Veterinarian' for manuscript writing/ submission.
- Please pay processing fee of Rs. 1200/- online in the account of Dean, College of Veterinary Sciences, along with each article.
- After revision, please return the revised manuscript and rebuttal at the earliest.
- Please mention your article reference number in all correspondence for a quick response.
- We solicit your co-operation.
- All correspondence should be addressed to 'The Editor', Haryana Veterinarian, Department of Veterinary Parasitology, College of Veterinary Sciences, LUVAS, Hisar-125004.

Editors