THE EFFECT OF PROSTAGLANDIN F_2ALFA ON FALSE PREGNANCY IN BITCHES

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SUMMARY: The property of Prostaglandin F2alfa Tham-salt to induce functional regression of the corpus luteum was investigated in 40 clinically false pregnant bitches of various breed and age. PGF_2 alfa was administered by subcutaneous injection of 0.5 mg, being effective in 37 animals, but had to be repeated in 4 cases. Animals reached normal behaviour in about 7 to 8 days after treatment. Vomiting and anorexy were observed in one bitch and sleepiness in as many three. The implications of the persistent corpora lutea in relation to the luteolytic effect of PGF_2alfa in false pregnant bitches is discussed. Results suggest that PGF_2alfa could be used for termination of clinical symptoms of canine false pregnancies. No methods of radioimmunoassay or competitive protein binding are available for LH and progesterone analyses.

UNITERMS: False pregnancy*; PGF_2alfa*; Bitch*.

INTRODUCTION

False pregnancy is a condition described[2] as "an intensification and prolongation of metoestrus in the bitch. The essential feature of the condition is the persistence of the corpora lutea in the ovaries."

On the other side, it has been suggested[1] that PGF_2alfa could be used for termination of unwanted canine pregnancies through an active luteolytic mechanisms.

It was therefore felt that PGF_2alfa could profitably be used for the suppression of pseudo-pregnancy in the bitch. Herein, we report the effect of subcutaneous injections of PGF_2alfa on clinical signs of pseudo-pregnant bitches.

MATERIALS AND METHODS

Animals used for this study were of several different types and were obtained from several different sources. Breed, age, last heat and breeding history can be seen in Table 1.

Clinical history revealed 8 bitches exhibiting mothering behaviour to inanimate objects, 2 exhibiting labour pains, 15 bedmaking and one nursing a cat. Ten of the 40 bitches were reported as having several previous false pregnancy signs. At clinical examination 32 bitches presented galactorrhoea and 8 had mammary enlargement.

Prostaglandin F_2alfa-treated bitches received subcutaneous injections of 0.5 mg PGF_2alfa THAM buffer solution* . PGF_2alfa (100 mg) is dissolved in 10 ml of Tris-(hydroxy-methylaminoethane) buffer (pH 8.2).

RESULTS AND DISCUSSION

In only 3 (no. 8220, 16387, 31605) of the 40 treated bitches, PGF_2alfa did not cause regression of the symptoms of false pregnancy. In these cases, therapy was changed at the instance of the owners.

In the remaining bitches, galactorrhoea disappeared within 3 to 4 days, mammary enlargement decreased after 5 to 6 days and symptoms of false pregnancy quickly vanished in all but four cases (no. 12126, 16387, 31855, 35671) in which treatment had to be repeated. Nevertheless, the animals reached normal behaviour in about 7 to 8 days after treatment.

No severe or debilitating systemic side effects were observed in any of the PGF_2alfa-treated bitches, excepting mild symptoms of vomiting and anorexy in one (no. 17863) and sleepiness in three of them (no. 19162, 20529, 24396).

There are changes in the genital tract of false pregnant bitches, like increased uterus and hiperplastic endometrium which may be attributed to persistent corpora lutea resulting from continued secretion of luteinising hormone from the anterior pituitary or from production of a luteotrophin from another site[2]. A luteotrophin may be produced by the hyperplastic endometrium of false pregnancy, and cause the persistence of the corpus luteum.

So, the relatively quick disappearance of clinical symptoms of the disease in 37 out of 40 bitches suggests that PGF_2alfa could be used for termination of canine false pregnancy through a luteolytic effect, in a similar way as it has been reported[1] for termination of unwanted pregnancy in the bitch.

Unfortunately, we have no conditions to measure serum levels of LH and progesterone by radioimmunoassay and competitive protein binding techniques in the bitches studied. So, our conditions were limited to breeding and clinical histories, but much more reliable observations with regard to clinical examination and good results of the treatment were available.

* Ajinomoto Co., Inc. Tokyo.

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RESUMO: Injeções de 0,5 mg de prostaglandina F2alfa foram aplicadas, por via subcutânea, em 40 cadelas com sintomas clínicos de pseudociese. O produto mostrou-se eficiente em 37 animais, havendo necessidade de repetição do tratamento em 4 casos. Em cerca de 7 a 8 dias após o tratamento houve retorno ao comportamento normal. Efeitos colaterais como vômitos e anorexia foram observados em um animal e sonolência em outros três. Discute-se o efeito luteolítico da PGF2alfa com base na regressão dos sintomas, embora não se disponha de métodos adequados para análise quantitativa de LH e progesterona.

UNITERMOS: Pseudociese*; PGF2alfa*; Cadelas*.

TABLE I. - Case records of false pregnancy in bitches treated with PGF2alfa

No	Breed	Age (years)	Last heat (days)	Breeding history
1630	Mongrel	2.5	60	N
4481	Mongrel	7.5	N.K.	N.K.
8220	Smooth-Haired Terrier	6.0	90	N.K.
12126	Pointer	5.0	20	N
15745	Miniature Pinscher	1.5	40	P
16387	Mongrel	7.0	45	N
16870	Mongrel	7.0	N.K.	N.K.
17863	German Shepherd Dog	11.0	45	N.K.
18520	Mongrel	4.0	60	N.K.
18825	Dobermann pinscher	3.5	N.K.	N.K.
18964	Pekingese	1.0	60	N
19162	Cocker spaniel	6.0	120	N.K.
20529	Dobermann pinscher	1.0	90	N
20644	Mongrel	11.0	N.K.	N.K.
20714	Miniature pinscher	1.0	50	N
21315	Pekingese	3.0	60	N.K.
21963	Mongrel	10.0	120	N
22381	Pekingese	2.5	60	N.K.
22627	Pekingese	N.K.	45	N.K.
23833	Pekingese	14.0	190	N.K.
24396	Mongrel	2.0	60	N
24620	Dalmatian	2.0	60	N.K.
29006	Pekingese	12.0	120	N.K.
31593	Pekingese	1.5	N.K.	N.K.
31605	Dalmatian	1.0	N.K.	P
31741	Mongrel	N.K.	N.K.	N.K.
31817	Mongrel	1.0	N.K.	N
31846	Pointer	10.0	60	N.K.
31855	Pekingese	9.0	N.K.	N.K.
31870	Mongrel	4.0	60	N
31886	Mongrel	3.0	N.K.	N
31945	Pointer	N.K.	N.K.	N.K.
31952	Dobermann pinscher	7.0	60	N
32182	Dalmatian	1.0	N.K.	N
34209	Miniature pinscher	1.5	60	N
34640	Chihuahua	10.0	N.K.	M
35228	Mongrel	7.0	120	N.K.
35671	Miniature pinscher	1.0	30	N
36678	Pekingese	7.5	N.K.	N
36880	Pekingese	7.0	70	N

N.K.- Not knowm — N- Nulliparous
P- Primiparous — M- Multiparous

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