

MATERNAL BEHAVIOUR IN DOMESTIC CATS

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Key word: behaviour, maternal, cat

Abstract: The study presents maternal behaviour in cats during and after parturition and maternal instinct changes. The paper establishes a direct relation between prolactin level and maternal instinct in cats.

INTRODUCTION

Our purpose was to identify the sequences of cat maternal behaviour, to present an ethogram, to identify the maternal instinct changes monitoring the kittens' development and to establish a relation between hormonal, Ca and Mg levels and maternal instinct.

MATERIAL AND METHODS

Seven adult cats and nine kittens were studied:

Four adult cats with kittens

Three adult cats without kittens

Three kittens in first 12 hours of life

Two kittens in first week of life

Two kittens – one month age

Two kittens – three months age

In adult cats we observed maternal behaviour aspects and in kittens the activities in the first three months of age.

Methods used:

1. Observation

2. Counting

3. Photography

4. Blood samples prelevation for hormonal and biochemical determinations

5. Results interpretation

Observation was realised in the natural cat's environment. Counting and photography were realised with instruments which didn't affect animal behaviour. Blood samples were prelevated in vacutainers without anticoagulant substances.

From blood samples were determined:

- prolactin levels. Determinations were made in EriVet laboratory from Cluj-Napoca.

- Ca and Mg levels

RESULTS AND DISCUSSIONS

To identify exact phases of maternal behaviour during and after parturition we described the behaviour aspects and biochemical +hormonal determinations were made.

Maternal behaviour presents two main characteristics :

General motivation to protect and feed the kittens

Kitten specific identification

General maternal behaviour starts at parturition moment being influenced by decreasing estrogen and progesteron levels and appearance of the kittens.the kitten progression in the uterus tract produce a second identification phase.

Cat's behaviour during parturition

A few days before parturition some cats may become agressive, looking for quiet places.Sometimes one cat may prepare more than one place for parturition. Few hours before parturition cats are licking the mamar and vulvar zone. The salivar liquid will help the kittens to find the mamar gland

Parturition act consists in three phases:



Fig. 1 Preparation for parturition



Fig. 2 Alanto-chorion appearance

First phase: When contraction appear the cat adopt a specific position .This phase can take a few hours.

Second phase: At the vulvar region appears alanto-chorion membrane. Than the alantoidian liquid will appear.

Third phase: The amniou and the kitten appear in 10-15 minutes after alantoidian discharge.



Fig. 3 Amniou appearance



Fig. 4 Kitten covered by amniou

Maternal behaviour after parturition

Every kitten is born in own amniotic membrane wich will be broke by the cat.The kitten will be cleaned by licking, this act breath and increase the body



Fig. 5 First contact cat-kitten

being important to activate kitten's temperature.

The umbilical cord will be cut by the cat and all placental membrane will be consumed.



Fig. 6 The cat cut umbilical cord



Fig. 7 The cat eats the placental membrane

Imprinting process: after parturition a critical period exists when primary socialisation is realised between the cat and kitten For this process is very important to keep the kitten with the cat after parturition.



Fig. 8 Imprinting

Parturition time for a cat with three kittens is variable between 110,6 to 207,8 minutes. For a cat with two kittens it takes from 96,6 to 188 minutes.

Cat's in good health normally don't have problems at parturition. In the first week after parturition the cat feeds and take's care of kittens about 22,8 hours/day. In this period kittens are totally dependent to their mother. In the period 14-28 days after parturition the cats take care of the kittens between 21, to 22 hours/day.



Fig. 9 The cat stimulate the kitten to urinate

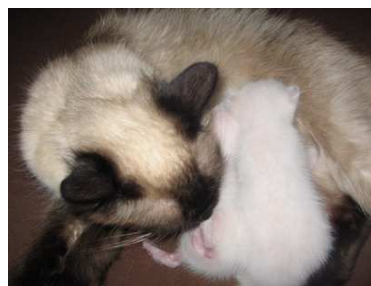


Fig. 10 Relation between cat-kitten

At 6-8 weeks the cat stops feeding the kittens. When kittens have 5 weeks the cat offers them just 14,4 hours daily. When kittens will be early separated to their mother they will be not very dependent one to each other. Sometimes siamese cats take care of their kittens 4,5 months after parturition.

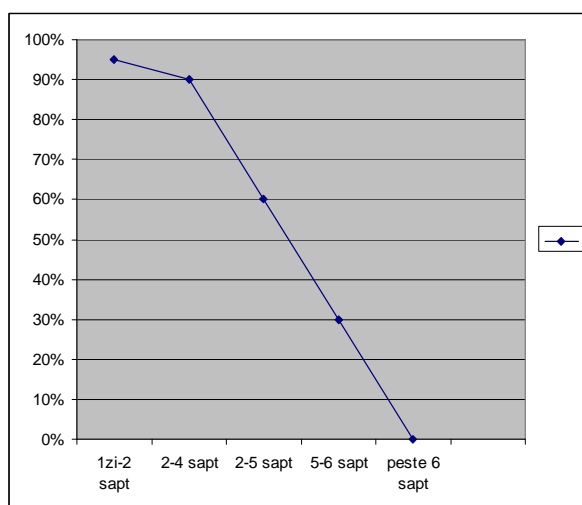


Fig. 11 Percentage interpretation of the time
Hormonal and biochemical values:

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TEST	RESULT	UNIT	MIN	MAX
PROLACTIN	40.60	ng/ml	3.10	24.60
CA TOTAL	4.36	mEq/l	4.50	10.00
MG	1.52	mEq/l	1.50	4.00

CASE 1

DATE: 01.06.2007

PACIENT NAME: MITZI

OWNER: Covaciu Ana

CLINIC: USAMV

DR: PROF. DR. PAPUC IONEL

SPECIES: FELINA

BREED: EUROPEANA

AGE: 4,5 ANI

SEX: FEMALE

TEST	RESULT	UNIT	MIN	MAX
PROLACTIN	35.30	ng/ml	3.10	24.60
CA TOTAL	4.20	mEq/l	4.50	10.00
MG	1.49	mEq/l	1.50	4.00

CASE 2

DATE: 01.06.2007

PACIENT NAME: PUSI

OWNER: Timen Monica

CLINIC: Trivet

DR: Timen Monica

SPECIES: FELINA

BREED: SIAMEZA

AGE: 1 AN

SEX: FEMEL

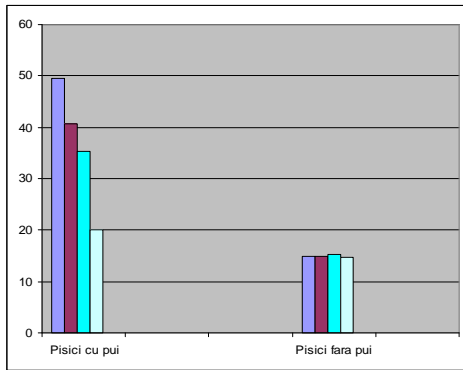


Fig. 12 Prolactine levels(ng/ml)

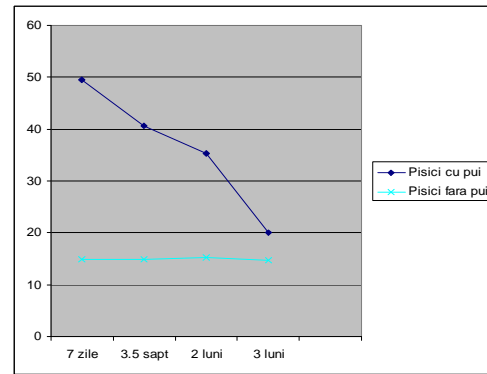


Fig. 13 Prolactine levels(ng/ml)

CONCLUSIONS

Prolactine levels increase after parturition. this value will decrease when maternal instinct decrease.

When kittens are seven days old , prolactine level is about 49,5 ng/ml.

At one month age prolactine levels decrease at 40,6ng/ml

Next period prolactine levels will decrease to 39,5ng/ml.

At 27,8 ng/ml prolactine , the kittens are totally independents to the cat.

Cats without kittens have prolactine levels between 3,10 and 34,6ng/ml, average being 15ng/ml.

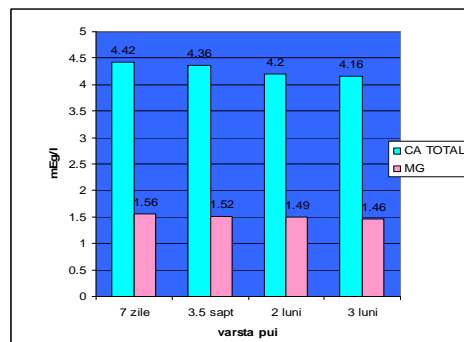


Fig. 14 Ca and Mg levels in cats with kittens

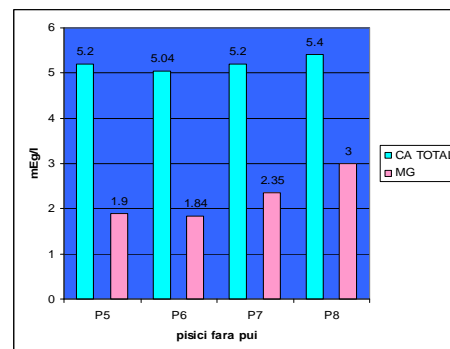


Fig. 15 Ca and Mg levels in cats without kittens

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