

## **F4 Synthetic Pheromone : A Means To Enable Handling Of Cats With A Phobia Of The Veterinarian During Consultation**

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### **Introduction**

In daily practice, it so happens that restraint of some cats is virtually impossible without sedation. For many reasons, including early neural development in a poorly stimulating environment and post-traumatic phobia, those patients show a dramatic fear of the veterinarian, which renders their consultation very tricky. Ethologists presume that there is socialisation and familiarisation of the cat with its master by the cat depositing pheromones on the owner by the cat rubbing on the owners' legs. The subject of our research was to use the F4 synthetic pheromone, referred to as "allomarking pheromone" ( by SANOFI Animal Health, France), during veterinary consultations, to inhibit aggressive reactions and thus to enable contact and restraint.

### **Aim of the trial**

This protocol was drafted for the following goal : to evaluate the efficacy of the synthetic F4 fraction in a propylene-glycol solution in enabling the handling of cats with a phobia of the veterinarian during consultation. One important point is that neither sedative drugs nor restraint devices were to be used.

### **Design**

The trial was based on a situation where the vet could not achieve any physical examination with the cat. The agonistic behaviours noted by the owners were recorded at the initial stages and regarded as the "reference state". These observations were subsequently checked via an interview with the treating veterinarian. The principle author undertook the experiment personally.

26 cats have been included in this monocentric study, divided into two parallel groups. This was a simple-blind clinical trial.

Whatever the treatment, 1 ml of the solution was applied onto each palm of the hands and each pit of the investigator's elbows 5 minutes before opening the cat's travelling basket. For the first 2 minutes following the opening of the box, the investigator had to stand still, leaning on the opposite side of the examination table on which the box had been laid down. He had to present his hands, palms open up and sleeves rolled up, so as to uncover the areas on which either the treatment or the placebo had been sprayed. Once the first stage had elapsed, the investigator could slowly put forward his hands toward the cat and gradually come into contact with it.

The cat was in contact with the investigator for at most 30 minutes. During this time its reactions, the time to the first peaceful physical contact and the initiator of the latter (cat or man) were recorded.

### **Animal selection**

Cats were selected among our own clientele and according to the following criteria for admission : they could be of any breed, sex, weight, neutered or intact ; they had to be 6 months to 7 years old. The owners' complaint was that the cats systematically aggressed their vet whatever the latter's way to approach it. The anticipation symptoms sometimes expressed when the owners try to get the cat to enter the transport basket before taking it to the surgery was an accepted symptom. As is the case with the anticipation manifestations during the trip.

Two kinds of criteria for pre-admission exclusion could be defined :

— pathological case histories : the pets whose medical file or examination revealed the following elements could not be included : consultation for an emergency, patent lack of socialisation with the human species (cat avoiding people in general), and any central neurological condition (hydrocephalus, tumours, encephalitis...). In case of doubt, admission was not achieved.

— therapeutic case histories : long-action corticosteroid or injection of progestational hormone in the past 6 months, psychotropic drugs used in the past 2 months, application of FELIWAY in the car or in the travelling basket in the past 7 days, application of FELIWAY on the examination table in the past 2 hours, or any training procedure in the past 2 months.

### **Treatment**

The verum was the F4 fraction in a propylene-glycol vehicle with an adjuvant of vegetal origin. The placebo merely consisted in the propylene-glycol solution alone. A 1 ml dose was applied onto each of the 4 body areas of the investigator as described earlier. Cats were assigned a number as they were included into the trial. They were then entered into a randomisation list which determined which kind of treatment they would be submitted to.

30 minutes before entering the consultation room, clients were given an information sheet explaining the role of allomarking pheromones, so that they could give their informed consent.

Some concomitant treatments could not be used : any psychotropic drugs, any anaesthetics, and FELIWAY. Any other treatment was allowed.

### **Schedule**

Before being admitted to the trial, every case had to be assessed during an interview with the owners that had previously let the vet know of the difficulty in handling their cat. A full case history was collected. The treating veterinarian was also called to check whether the pet was difficult to examine despite a proper approach.

At the end of the inclusion consultation, each cat was registered onto a record sheet which assigned it the number of its position in the trial, from C1 to C26. This random list attributed each case to one of the four tainted glass bottles called A, B, C or D containing one of the two solutions. Thus the cats' owners could not know what the bottles contained.

### **Assessment of efficacy**

The efficacy was evaluated as the time elapsing before it was possible to quietly touch the cat without triggering any aggression.

Other criteria were the number of aggressions undergone by the investigator during the 30 minutes session, and whether the cat or the investigator initiated the first peaceful contact. A peaceful contact is a direct physical contact that can be maintained for more than 30 seconds without eliciting any aggression from the cat. Can be considered as an aggression any reaction comprising one or several of the following sequences : snarling, spitting, hissing, growling, threat mimics, clawing, charging, spraying or biting.

Where allomarking happened, it was recorded.

From the criteria above-mentioned, three groups have been stated :

- cases when cats could be touched peacefully within the 15th minute would be successes
- cases that could be handled between the 15th and the 20th minute would be improvements
- others would be failures.

### Operational matters

No alteration of the protocol was allowed.

Any resort to a means to limit the cats reactions would be regarded as a shortcoming in the adherence to the protocol and involve exclusion from the trial, the case being considered as a failure.

Although we tried to avoid it, abortion of the trial was possible from the client at any time, and from us for the following reasons : arising of unwanted behavioural manifestations (e.g. severe vegetative hyperactivity such as dyspnea), protocol uncomplied with and very unsecure aggressions.

### Collection and processing of data

Every piece of information has been recorded into a record sheet. We progressively entered data into a computer. These data are still available for audit. A Student's t test was employed for statistical analysis.

### Results

No exclusion measure had to be taken. The results are displayed for each cat in table I.

	T.B.P.C.	NB AGGRES	P.C.INIT.	TREATMENT
C1	1.2	0	CT	V
C2	19.5	11	VT	P
C3	22.3	17	VT	P
C4	2.2	1	CT	V
C5	0.8	0	CT	V
C6	1.4	0	VT	V
C7	23.4	15	CT	P
C8	1.6	0	VT	V
C9	15.6	9	VT	
C10	18.7	8	VT	P
C11	21.2	7	VT	P
C12	1.2	1	CT	V
C13	1.4	0	CT	V
C14	19.6	11	VT	P
C15	1.5	0	CT	V

C16	24.3	16	VT	P
C17	14.8	13	VT	P
C18	1.3	0	CT	V
C19	0.9	0	CT	V
C20	1.8	1	CT	V
C21	18.7	12	VT	P
C22	16.9	8	VT	P
C23	2.1	0	CT	V
C24	21	10	CT	P
C25	1.2	0	CT	V
C26	16.7	15	VT	P

Table 1 : Raw data

Grey lines = F4 group / White lines = control group	CT = cat
T.B.P.C. = time before a peaceful contact (in minutes) (investigator).	VT = vet
NB AGGRES. = number of aggressions during the session	V = verum
P.C. INIT. = peaceful contact initiator	P = placebo

From these raw data, mean results can be calculated (see table 2).

	T.B.P.C.	NB AGGRES.	P. C. INIT.
VERUM	1.43	0.23	84.6%
PLACEBO	19.43	11.69	15.4%

Table 2. Mean results.

Comparison of the two treatment results in a highly significant difference ( $p < 0.0001$ ).

The F4 fraction with a vegetal adjuvant proves to be an effective means to promote a peaceful contact between the vet and the cat, most often on the cat's initiative.

## Discussion

This study meets most of the acknowledged requirements for a clinical trial, with the exception that it lacks a double-blind procedure. Actually one can claim that the investigator's demeanour is likely to vary unconsciously according to the kind of treatment being administered to the cat he is addressing. One could go so far as to suggest that a vet presented with a placebo animal but told it was a treatment animal, could obtain slightly better results as he is not expecting a confrontation.

Another argument against the use of a double-blind procedure is that the F4 solution smells significantly different from propylene-glycol alone. Thus it is virtually impossible to hide it, especially for the investigator himself. We thought that wearing a clothes-peg on our nose would only contribute to devaluing public opinion of our profession. But such a procedure could be considered by volunteers.

## Conclusion

After this trial, it clearly appears that the F4 synthetic pheromone with its adjuvant of vegetal origin can be used with success to ease the restraint of cats with a phobia of the veterinarian.