

Veterinary: Behaviour Disorders in Cats

SUMMARY: Behaviour disorders in cats, such as inappropriate urination and destructive actions, are commonly attributed to separation-related problems and may negatively affect the relationship between the pet and the owner. In this study, two cats were successfully treated with the antidepressant fluoxetine in Lipoderm, a topical permeation-enhancing base. Following 1 month of treatment, the cats were no longer showing signals of emotional distress.

Introduction:

Recent studies have shown that cats are social animals and are able to create bonds with their owners, which provide wellbeing and companionship for both the pet and the owner. However, this relationship can be soured when the pet exhibits behaviour disorders, and may even lead to abandonment of the pet by the owner [1]. Examples of behaviour disorders include inappropriate urination and defecation, increased vocalization, and destructive actions. These disorders may be triggered by a multitude of reasons as, for instance, the physiological and emotional distress that occurs when the animal anticipates or experiences the absence of the owner [2]. The consensus is that cats are able to deal with the absence of their owners for extended periods of time [1] but separation-related problems can have a variety of underlying causes, such as over-attachment and shortage of stimulation [3]. The purpose of this case study is to discuss the management of behaviour disorders in two cats with a bespoke unlicensed medication.

Case Report:

Charlie and Isobelle are both 9-year-old, pure breed Burmilla cats, and were adopted at the age of 12 weeks from a breeder who kept multiple cats. Charlie is a male neutered cat and Isobelle is a female spayed cat (Figure 1). Both cats had a propensity to urinate and defecate in inappropriate locations in the absence of the owner and, occasionally, in front of the owner as well. These behaviour disorders could happen up to 10 times a day. Unsuitable micturition locations included soft furnishings, the floor, walls, bookshelves, curtains, paperwork, bedding, kitchen worktops, rugs, door mats and bathmats. The cats would also defecate on the floor in most rooms of the house, quite often right next to the litter trays. The owner bought garden furniture to replace soft furnishings, removed carpets throughout the house and was unable to have visitors. All these factors caused unwanted distress and had a negative impact on the quality of life of the pet owner. Desperate to find a solution to these suspected separation-related disorders, the owner visited several animal and feline behaviourists. The recommended treatments included herbal remedies and calming supplements.

The owner also displayed additional litter trays throughout the house. Unfortunately, none of these treatments and actions were effective in stopping the urination and defecation.

At a later stage, a veterinarian physician prescribed tablets of fluoxetine, an antidepressant of the selective serotonin reuptake inhibitor class. The cats refused to take the tablets and thus an oral liquid was prescribed instead. Unfortunately, the oral liquid was refused as well due to the bitter taste of fluoxetine. An alternative bespoke unlicensed medication was discussed between the pet owner, the veterinarian and the pharmacist (triad relationship), and the transdermal route of administration was perceived as a promising treatment option. As such, the veterinarian physician prescribed fluoxetine hydrochloride 4 mg/0.1 mL in Lipoderm, a topical permeation-enhancing base thoroughly referenced in the literature (PCCA Formula 14092, Table 1) [4,5]. The bespoke unlicensed medication was supplied as 6 x 1 mL, packed into 2-mL syringes (Figure 2), to be applied 0.1 mL inside the ear of Charlie and Isobelle, once a day for 1 month initially.

Rx

| | |
|--------------------------|---------|
| Fluoxetine Hydrochloride | 4.48 g |
| Propylene Glycol | 2 g |
| Base, PCCA Lipoderm | 93.52 g |

Table 1. Fluoxetine 40 mg/g Topical Lipoderm.



Figure 1 (left). Photo of Isobelle, a 9-year-old Burmilla cat.

Figure 2 (right). Photo of bespoke unlicensed medication.

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Methodology:

The efficacy of the bespoke unlicensed medication was assessed using a health-related quality of life (HRQoL) questionnaire specifically designed for feline patients, the "Identification of behavioral signals of separation related problems in domestic cats: Questionnaire for cat owners." It consists of a reported assessment of the cats' HRQoL based on the owner's perception of the overall behaviour and wellbeing of the cat. This questionnaire includes 30 items distributed in four sections, as follows: owner's information; cat's information; cat behaviour in the owner's absence; cat environment and management. The majority of the questions are dichotomous (Yes/No), with a few open questions for additional information [1].

Results and Discussion:

The HRQoL questionnaire was completed retrospectively by the owner with reference to both Charlie and Isobelle, before and after 3 months of treatment. The baseline answers gave a general understanding of the cats' lifestyle and behaviour prior to treatment, consistent with the pet owner's reported assessment. The cats lived in the owner's home, with visual and physical access to outdoor spaces and the street. The cats were left in the house alone 1 to 4 times a week, for a period of 2 to 6 hours at a time. Neither cat showed signs of constant vocalization, sadness, depression or destructive behavior in the absence of the owner. The primary behaviour of concern was inappropriate urination and defecation for which the bespoke unlicensed medication was prescribed. Treatment was initiated in February 2021 and, within a perceived short period of time, the inappropriate behaviour had ceased. The cats were no longer urinating and defecating throughout the house, which is reflected in the HRQoL questionnaire as the two items relating to urination and defecation changed from yes to no. In the course of the treatment, the owner decided to reduce the dosing regimen from the initial daily application to once every other day. This reduction did not cause a relapse and the owner continued with this regimen until the publication of the study in November 2021. According to the owner, the cats' behaviour and wellbeing improved considerably when treated with the bespoke unlicensed medication, which had a profound effect on her quality of life.

The transdermal route of administration provided an effective means to treat the cats with fluoxetine. In comparison to the oral administration, transdermals overcome the flavoring issues, facilitate compliance and allow medications to bypass the first pass metabolism, which reduces the side effects profile. Compounded transdermal medications have been demonstrated in the literature to be a safe and effective alternative to oral and parenteral dosing for certain medications [6]. By compounding the fluoxetine in the permeation-enhancing base, the absorption through the dermal layers of the skin is likely to be improved. This study shows that fluoxetine in Lipoderm can be a good treatment option for behaviour disorders in cats. It may also be beneficial in treating stress and separation related problems in pets brought about by the COVID-19 pandemic. Current times have seen an increase in people working from home and pets have grown accustomed to having their owners with them. Problems may be triggered in the future when restrictions are fully lifted and the owners return to the workplace, leaving their pets behind at home. Fluoxetine could potentially be utilized as a treatment option in these cases as well based on the results of this case study.

References:

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