



Use of dexmedetomidine hydrochloride oromucosal gel to reduce fear in dogs with noise phobias

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INTRODUCTION

Noise phobias are very common in dogs and have a strong negative effect on their welfare. The treatment of phobias is based on the application of a desensitization protocol (using sound recordings), but often the additional use of an anxiolytic can be helpful. Fear reaction is usually linked to an increase in catecholamine levels. Therefore, compounds that act upon adrenergic receptors can modulate the fear response and may be useful in the treatment of phobias.

AIM OF THE STUDY

To obtain preliminary data on the effectiveness of dexmedetomidine hydrochloride 0.1 mg / ml oromucosal gel (Sileo[®], Ecuphar Veterinaria S.L.U), an alpha-2 agonist, to reduce the fear reaction during noise exposure.

MATERIAL AND METHODS

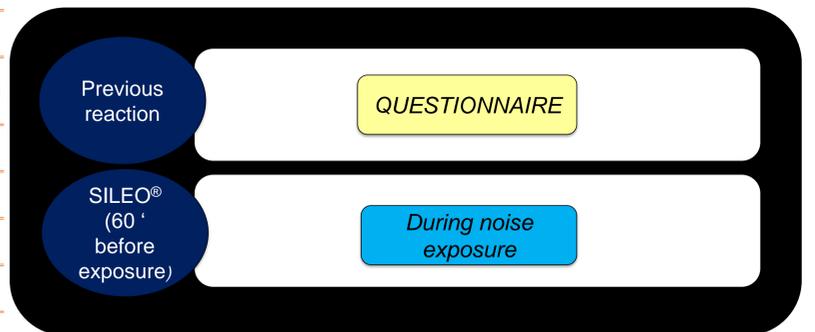
Before the prescription of Sileo[®] the owners completed a questionnaire (see table 1) based on a description of the dog's usual behavioural reaction to previous noise exposure episodes. All responses were categorical. The questionnaire was again completed after giving Sileo[®] to prevent the fearful reaction to a very noisy event (fireworks).

Table 1- Questionnaire

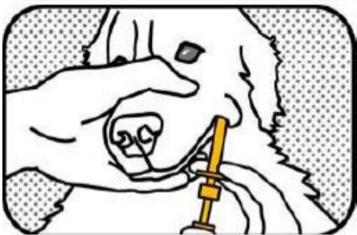
Q1	The dog doesn't stop moving
Q2	The dog hides
Q3	The dog destroys objects, walls, furniture
Q4	The dog bends down
Q5	The dog is restless
Q6	The dog freezes
Q7	The dog pants
Q8	The dog vomits
Q9	The dog urinates/defecates
Q10	The dog barks, whines, howls
Q11	The dog seeks the owner's contact
Q12	The dog tries to scape
Q13	The dog shivers
Q14	The dog has difficulties to stand or walk
Q15	The dog does not respond when called
Q16	The dog reacts to low intensity noises inside the house in an exaggerated manner
Q17	The dog is quiet but alert

Characteristics of the dogs included in the study

Nº of animals	43
Breed	25 purebred / 17 crossbred
Gender	24 females / 19 males
Weight (kg)	17,5 (2 - 46)
Age (years)	6,3 (1 - 13)
Neutered	YES (29) / NO (14)
Origin	Street (7) Private (18) Breeder (9) Refuge (6) Shop (3)
Age of acquisition	31 < 1 years / 11 > 1 years
Location during event	Inside (37) / Outside (6)



Sileo[®] was administered by the owners one hour before the noise exposure started. The dose was administered according to the weigh of the dog.



Bodyweight of dog (kg)	Number of dots
2.0-5.5	1
5.6-12	2
12.1-20	3
20.1-29	4
29.1-39	5
39.1-50	6
50.1-62.5	7
62.6-75.5	8
75.6-89	9
89.1-100	10

A chi-square test was used to evaluate whether there was any significant difference between the 2 questionnaires ("previous" vs. "Sileo[®]").
SAS[®] (version 9.2; software SAS Institute Inc., Cary, NC; 1991-2001)

RESULTS

Question	% Previous exposure	% Sileo [®]	p-value
Q7 - The dog pants	55%	32%	0.04
Q9 - The dog urinates/defecates	17%	0%	0.006
Q10 - The dog barks, whines, howls	40%	20%	0.05
Q12 - The dog tries to scape	55%	32%	0.04
Q13 - The dog shivers	87%	50%	0.0003
Q15 - The dog does not respond when called	77%	55%	0.03

The frequency of dogs that panted, eliminated, shivered, vocalized and tried to escape was significantly lower when dogs were administered Sileo[®].
The frequency of dogs that did not respond to their owner's call was significantly lower during the noise exposure in the Sileo[®] treatment group.

Owners found Sileo[®] easy to be administered in 90% of the cases.

67% of cases considered Sileo[®] to be better and 33% to be equal than the other previous non-pharmacologic measures used to control/prevent signs of anxiety and/or fear during the basal situation

Sileo[®] is an efficient strategy to prevent the onset of several fear-related behaviours reactions when a dog suffers from noise phobias.

References:

Blackwell E, Casey R, Bradshaw J. Firework fears and phobias in the domestic dog. PhD. University of Bristol. October 2005.
Cimen ZS, Hanci A, Sivrikaya GU, Kilinc LT, Erol MK. Comparison of buccal and nasal dexmedetomidine premedication for pediatric patients. Ped Anesth 2013;23:134-138.
Cohen AE, Bennett SL. Oral transmucosal administration of dexmedetomidine for sedation in 4 dogs. Case report. Can Vet J 2015; 56:1144-1148.
Hopfensperger MJ, Messenger KM, Papich MG, Sherman BL. The use of oral transmucosal dexmedetomidine hydrochloride gel to facilitate handling in dogs. Journal of Veterinary Behavior 8 (2013) 114-123.
Sakurai Y, Obata T, Odaka A, Terui K, Tamura M, Miyao H. Buccal administration of dexmedetomidine as a preanesthetic in children. J Anesth 2010;24:49-53.