

The behavioral therapy for separation anxiety in dog

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Abstract. The puppies develop attachment to their mother between 3 and 12 weeks. In order to avoid the stress of separation from the mother, the separation should occur around the age of 3 weeks but not later than 6-7 weeks. If the separation is done after 12 weeks is already hard to avoid separation anxiety. At the time of separation from the mother, the puppies consider their master as their family, and when separation from them occur the puppy can experience different degrees of stress that can lead to separation anxiety syndrome. Biological material studied was represented by 112 dogs, of which 42 dogs were diagnosed with separation anxiety syndrome from that we formed a group of 12 dogs whose owners were actively involved in their treatment, and a major role lies in detachment therapy. As working methods were used: ethology consultation, evaluation grid for emotional and cognitive disorders in dogs, questionnaires for owners, observation sheet and statistical data processing. Using behavioral therapy as a method of treatment of separation anxiety in dogs caused a decrease in serum cortisol levels, total erythrocytes, total cholesterol, a slight increase in total leukocytes and magnesium levels, aspects which reveal therapeutic success. Treatment of separation anxiety in dog with behavioral modification techniques gave good results, having a working protocol reliable and easy to apply. In separation anxiety there is no partial recovery.

Keywords: separation anxiety, behavioral, therapy, dog, attachment

INTRODUCTION

The attachment is a necessary component of survival in a social group and helps maintain group cohesion (Voith and Borchelt, 1996). Excessive attachment of the dog to the owner and all behavioral disorders derived from the master's absence is the major causes of discontinuation relationship between man and dog (Flannigan and Dodman, 2001; Houpt *et al.*, 1996) of the abandon of dogs in shelters or on the street, (Sherman and Mills, 2008) or even euthanasia of dogs (Serguson *et al.*, 2005). Carr (1999) and Hepper (1994) studies showed that puppies can recognize the smell of mother and pups mother can recognize the smell even after 2-6 years of separation if it occurred when the puppies were between 8 and 12 weeks. All these results prove the strong connection between mother and puppy and show the trauma of separation, which causes strong manifestations of anxiety if necessary measures are not taken to avoid this syndrome (Lindsay, 2001; Mihăiță, 2012).

MATERIALS AND METHODS

Biological material studied was represented by 112 dogs, of which 42 dogs diagnosed with separation anxiety. As a working methods was used: consultation ethology, comments, descriptions, ethogram, scale for assessing emotional and cognitive disorders in dog (Page, 1998), behavioral modification techniques, questionnaires for owners, observation sheet, statistical processing data. Behavioral techniques applied were: detachment the owner from his dog, rewarding calm behavior of the dog, the dog desensitization when the owner comes or leaves and the independent development by providing opportunities to fill time during the

owner's absence (Mège *et al.*, 2003, Asztalos *et al.*, 2011). Diagnosis of separation anxiety in dog is determined only when the patient's behavior present at least five criteria (Mège *et al.*, 2003), namely: the persistence of a primary attachment bonds as evidenced by the need for physical contact with the owner, infantile behavior manifested through frequent callings, tempestuous games, sexual retardation, emotional miction, licking attempts, moaning when having a social contact; appearance of disorders after puberty; existence of a ritual when master is leaving or is returning; anxiety persistence manifested in sphere of the affectionate relationships, communication or sensory homeostasis. If the behavior of separation anxiety in dog begins immediately after the master leaving and fixes on his return, this constitutes a major diagnostic criterion (Landesberg, 2008; Asztalos and Papuc, 2012). The most common symptoms of separation anxiety in dog found in our research were represented by: destructive behavior, defecation and urination in inappropriate places, excessive vocal emissions, hyperactivity and hypervigilance, obsessive-compulsive behaviors, depression and loss of appetite, excessive behaviors joy when owner returns home and permanent need for physical contact with the person to whom the dog is attached (Asztalos *et al.*, 2011).

In order to quantify the degree of anxiety and the effects of therapy on the disorder, we have taken in the study the following parameters: serum cortisol, total erythrocytes, total white blood cells, serum magnesium, serum total cholesterol and serum triglycerides. The data were imported into MS Excel 2010 (Microsoft Corporation, Redmond, Washington, USA) as columns, grouped on categories of origin. Data's were analyzed with GraphPad InStat v3.05 (GraphPad, USA) statistical software. To distinguishing between the studied parameters before and after therapeutic intervention, data were statistically analyzed using the paired Student t-test (two-tailed paired t test). This test uses the comparison of the variation (of the dispersion) to achieve further comparison of means. ANOVA test was performed for each parameter studied, comparing the results after therapy. Analysis of variance is used to test the significance of the difference between the averages for more than two lines of data, whether dependent or independent. It was performed comparison of the mean values of each parameter in the study and the type of therapy performed. To view in more detail the relationship between the results we used the post-hoc Tukey-Kramer multiple comparisons. Values were considered statistically significant for $p < 0.05$.

RESULTS AND DISCUSSIONS

Tabel 1

Pacients according to age, sex and anxiety degree

Pacient	Age (month)	Sex	Anxiety degree
SASHA	14	F	3
THOR	22	M	3
SURI	18	M	4
ESHA	7	F	3
ASOS	21	M	4
DALILA	11	F	3
SOPHIA	6	F	3
ROY	24	M	4
BLECKY	8	F	3
FALCO	4	M	3
GANNA	17	F	3
FILA	15	F	4

For each patient in the study was prepared a clinical observation worksheet, where we have noted: health, established on the basis of clinical examination; behavioral manifestations; diagnosis and treatment instituted (Tabel 1). Changes in serum cortisol in patients treated with behavioral techniques are shown in Figure 1.

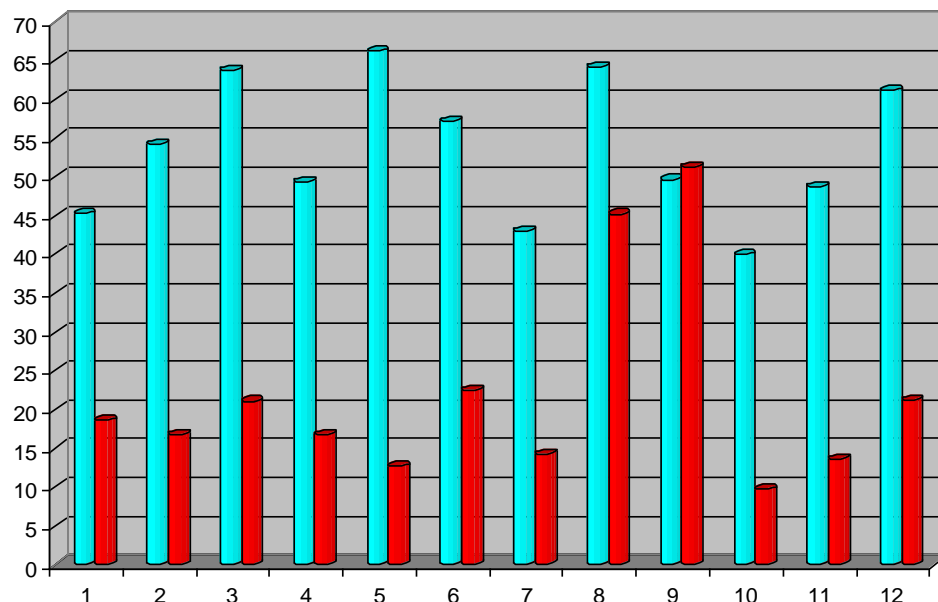


Fig. 1 Variation of serum cortisol in patients treated through behavioural methods (blue-before therapy; red – after therapy)

The value of serum cortisol in dog varies from 0.6 – 6.0 $\mu\text{l/dl}$ (Vaden *et al.*, 2009) and at the treated group there is a highly statistically significant difference ($t = 8.064$, $df = 11$, $p < 0.001$) between cortisol values before and after behavioral treatment. Changes in the total number of red blood cells in patients treated by behavioral methods are represented in Fig. 2.

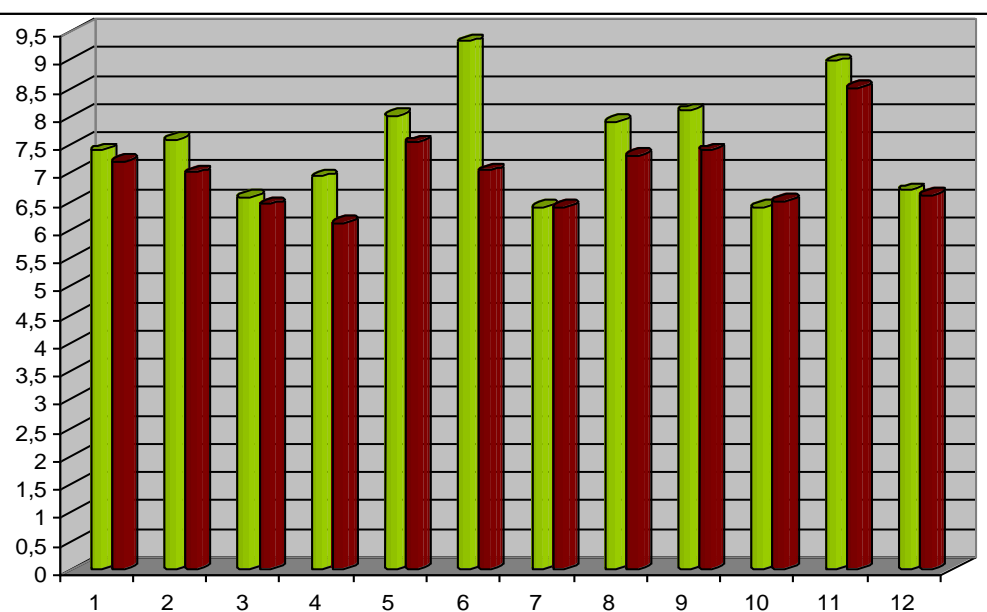


Fig. 2 The variation of RBC to the patients treated trough behavioural methods (green – before therapy; red – after therapy)

The value of the total number of red blood cells in dog varies from $5.8 - 8.5 \times 10^6/\mu\text{l}$ (Vaden *et al.*, 2009) and at the treated group there is a statistically significant difference ($t = 2.879$, $df = 11$, $p < 0.05$) between the values of the total number of red blood cells before and after behavioral therapy. The change in total white blood cells in patients treated with behavioral methods is represented in Figure 3.

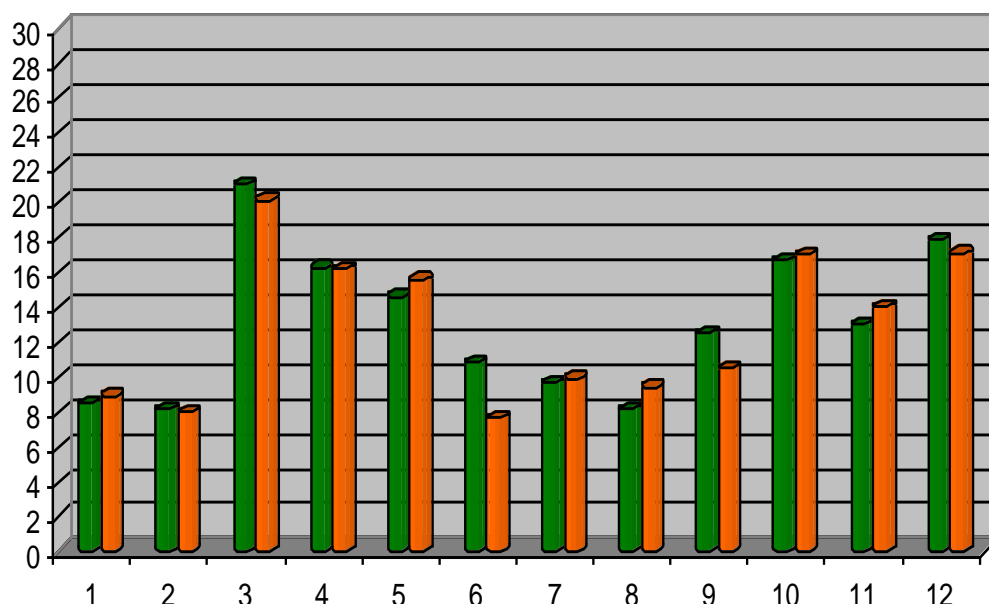


Fig. 3 The variation of white blood cells (WBC) to the patients treated trough behavioural methods (green – before therapy; orange – after therapy)

The total white blood cells in dog varies $4.9 - 16.9 \times 10^3/\mu\text{l}$ (Vaden *et al.*, 2009), in the treated group there was no statistically significant difference between the values of total white blood count before and after treatment ($t = 0.6366$, $df = 11$, $p > 0.05$). Changes in serum magnesium in patients undergoing behavioral methods are shown in Figure 4.

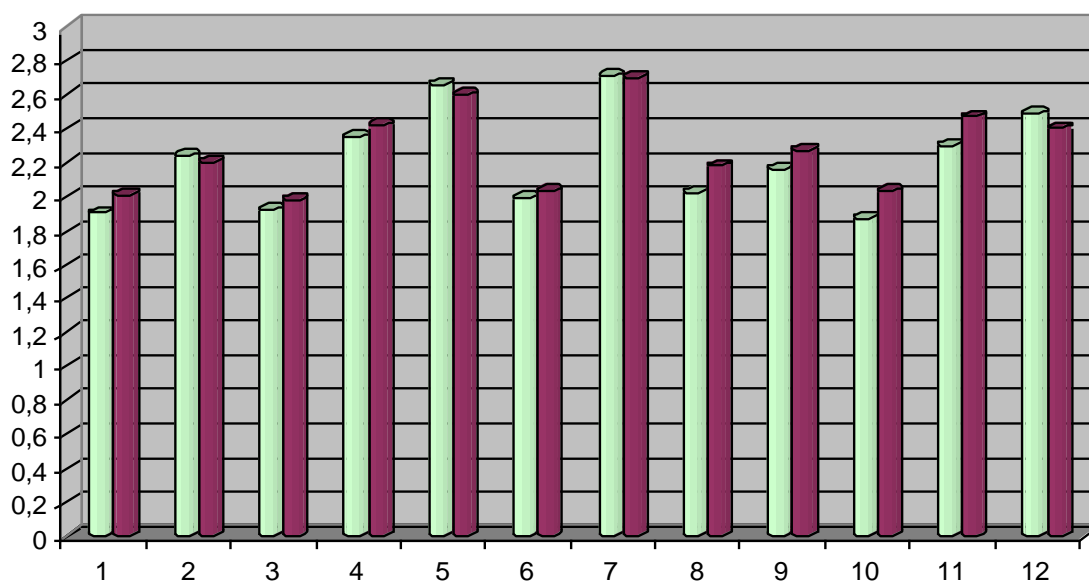


Fig. 4 The variation of Magnesium to the patients treated trough behavioural methods (light green – before therapy; red – after therapy)

The value of serum magnesium in dog varies from 1.6 – 2.4 mg/dl (Vaden *et al.*, 2009) and at the treated group, there was no statistically significant difference between serum magnesium levels before and after application of this therapeutic method ($t = 2.179$, $df = 11$, $p > 0.05$). Changes in serum cholesterol in patients treated by behavioral methods are shown in Fig 5.

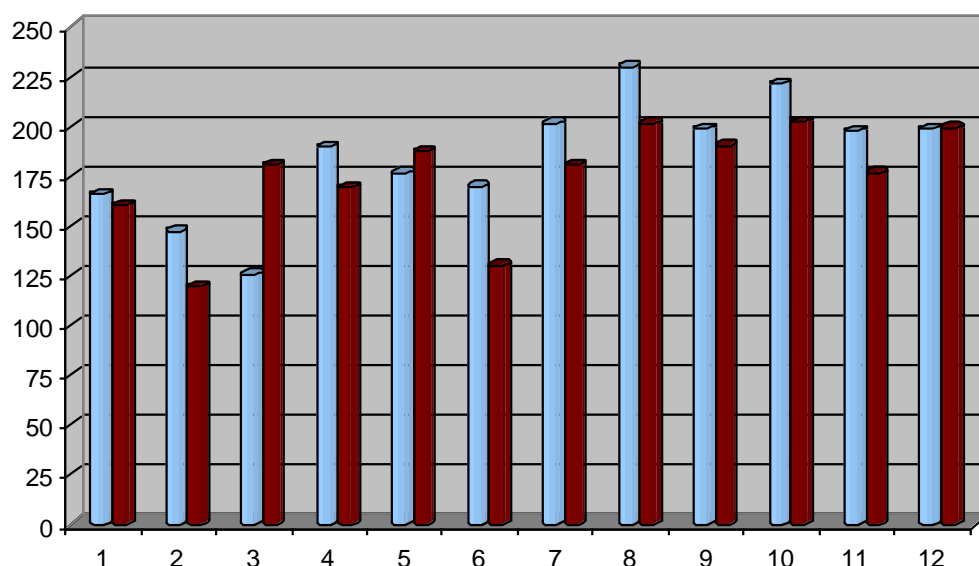


Fig. 5 The variation of total Cholesterol to the patients treated trough behavioural methods (light blue – before therapy; red – after therapy)

The value of serum cholesterol in dog varies from 0.6 – 6.0 μ l/dl (Vaden *et al.*, 2009) and at the treated group, there was no statistically significant difference between serum cholesterol levels before and after therapy ($t = 1.449$, $df = 11$, $p > 0.05$). Changes in triglycerides in patients treated by behavioral methods are represented in Figure 6.

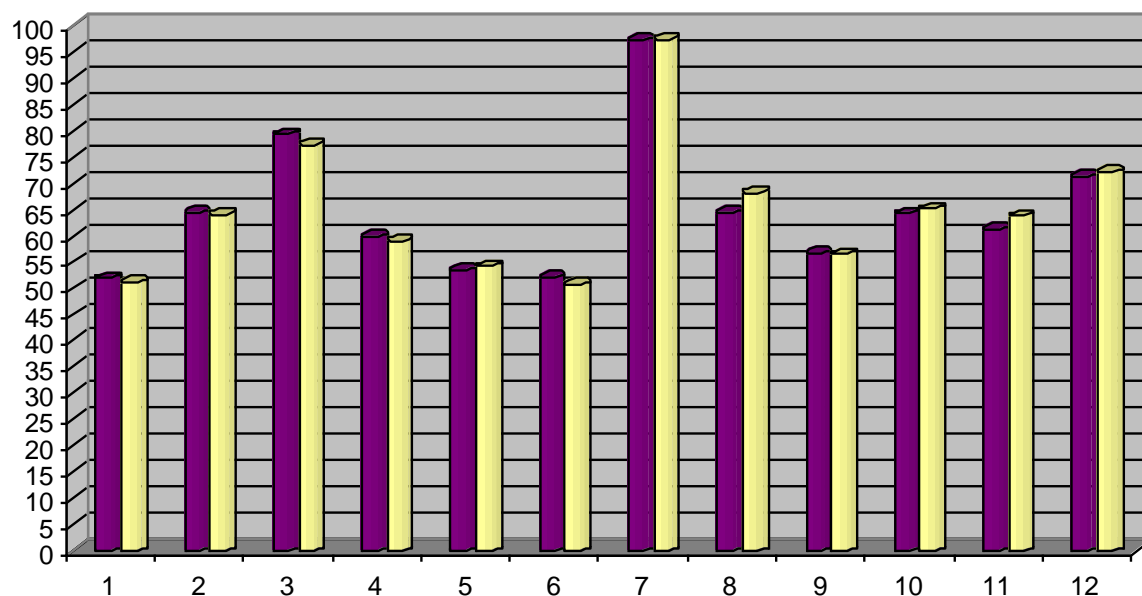


Fig. 6. The variation of triglycerides to the patients treated trough behavioural methods (magenta – before therapy; yellow – after therapy)

The value of triglycerides in dog varies between 30 – 141 mg/dl (Vaden *et al.*, 2009) and at the treated group, there was no statistically significant difference between serum triglyceride levels before and after therapy ($t = 0.7429$, $df = 11$, $p > 0.05$).

Most researchers with studies on separation anxiety in dogs believe that this disorder should be treated only by means of behavioral change (Takeuchi *et al.*, 2000; Tuber *et al.*, 1982; O'Farrell, 1992, Voith and Ganster, 1993; Askew, 1996; Nack, 1999). Although extremely useful, this type of treatment requires constant and consistent involvement of owner in the therapeutic process, the owner must be well informed about the clinical manifestations of anxiety and behavioral modification techniques to be applied correctly.

Multiple comparisons test results have revealed a highly statistically significant difference only between cortisol values and red blood cells. Magnesium levels, although not statistically significant increase after behavioral treatment, falling within physiological values. The results obtained for WBC, cholesterol, and triglyceride levels are not statistically significant and do not produce major influences before and after the behavioral therapy.

CONCLUSIONS

Following researches, we believe that stable and long-term results in the treatment of separation anxiety in dogs are obtained only by means of behavioral change, something that confirms the literature data. Treatment of separation anxiety in dog, using behavioral modification techniques gave good results, which is why we recommend having a working, reliable and easy to apply protocol. In the separation anxiety there is no partial recovery.

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