

STUDY REGARDING THE PHARMACOLOGICAL AND DIETARY TREATMENT IN CANINE MALABSORPTION SYNDROME

SIMION R.G.*, CODREANU I., CRIVINEANU M.

University of Agronomic Sciences and Veterinary Medicine Bucharest, Faculty of Veterinary Medicine, 050097, Independentei Street, District 5, Bucharest, Romania

*Corresponding author: dr.simion71@yahoo.com

ABSTRACT: The aim of this study is to establish a conclusive diagnosis of malabsorption syndrome, based on symptomatology and hematological, biochemical exams and then to follow the response to a combined dietary/immunosuppressive pharmacological treatment.

Key words: malabsorbtion, dietary therapy, pharmacological treatment, dogs

INTRODUCTION

The malabsorption syndrome in dogs includes a group of chronic enteropathies, characterized by faulty intestinal absorption due to mucosal damage and increase of intraluminal osmotic pressure, which can leads to chronic diarrhea, vomiting, weight loss, chronic and intermittent episodes of abdominal pain.

MATERIAL AND METHOD

The present study was carried out in the University Emergency Hospital Prof. Univ. Dr. Alin Bîrțoiu, Bucharest. The study was performed over a period of two years (April 2020 – May 2022), on 18 dogs with malabsorption syndrome (12 males and 6 females, various breeds, ranging from 2-6 years of age). The main selection criteria were based on the presence or absence of hypoproteinemia (serum protein levels <4.5 g/dL).

RESULTS AND DISCUSSIONS

Routine blood biochemistry values for each of the 18 subjects with malabsorption syndrome (group 1 – with normal serum protein levels and group 2 – with hypoproteinemia), are presented in table 1-2. The patients from group B, presented 10 days after treatment began, an increase of serum protein levels with an average of 27.1%, and an average of 54% after 30 days of treatment with immunosuppressive drugs, which means the normalization of mucosal permeability and the restoration of intestinal absorption (table 3).

Table 1. Biochemical parameters values in dog with malabsorption syndrome – group 1 - with normal serum protein levels

Case no.	CREA (mg/dL)	BUN (mg/dL)	Total serum protein (g/dL)	Albumin (g/dL)	Ratio Albumin/globulin
1	0,7	31	6.4	3.1	0.9
2	0,9	39	6.2	3.0	0.9
3	1.0	35	6.0	3.0	1.0
4	0.7	38	6.0	2.9	0.9
5	0.8	32	6.2	3.1	1.0
6	0.7	35	6.4	3.1	0.9
7	0.8	36	5.8	2.9	1.0
8	0,7	34	6.2	3.0	0.9
9	0,9	37	6.2	3.0	0.9
10	0,8	33	6.1	2,9	0.9
X±SD	0.8±0,1	35±3,4	6.1±0,2	2,9±0.07	0,92±0.04

Table 2 Biochemical parameters values in dog with malabsorption syndrome – group 2 - with hypoproteinaemia

Case no.	CREA (mg/dL)	BUN (mg/dL)	Total serum protein (g/dL)	Albumin (g/dL)	Ratio Albumin/globulin
1	0.7	27	3,8	1,8	0.9
2	0.9	39	3,9	1.8	0.8
3	0.8	30	3,8	2.0	1.1
4	0.7	36	4.0	1.9	0.9
5	0.7	34	4.2	2.2	1.1
6	0.9	32	3.9	1.8	0.8
7	0.8	31	4.4	2.3	1.0
8	0.8	35	3.2	1.5	0.8
X±SD	0.8±0.1	33±0,7	3.8±0.4	1,8±0,3	0,96±0.1

Table 3. Dynamic of serum proteins after dietary and pharmacological treatment, in relation to initial protein values

GROUP no 1 – dog with malabsorption syndrome - with normal serum protein levels					
Case	Total serum protein				
	Initial (g/dL)	10 days (g/dL)	%	30 days (g/dL)	%
1	6.4	6.6	3.1	6.6	3.1
2	6.2	6.2	0	6.4	3.2
3	6.0	6.2	3.3	6.4	6.6
4	6.0	6.0	0	6.4	6.5
5	6.2	6.4	3.2	6.4	3.2
6	6.4	6.8	6.2	6.9	6.2
7	5.8	6.0	3.4	6.2	6.9
8	6.2	6.4	3.2	6.6	6.4
9	6.2	6.2	0	6.4	3.2
10	6.1	6.2	3.3	6.2	3.3
X±SD	6.1±0,2	6,3±0.2	2.5±1.7	6,4±0.2	4,7±1.8
GROUP no 2 dog with malabsorption syndrome - with hypoproteinaemia					
Case	Total serum protein				
	Initial (g/dL)	10 days (g/dL)	%	30 days (g/dL)	%
1	3,8	4.9	27	6.0	54
2	3,9	4.8	20	5.8	45
3	3,8	4.2	10.4	6,1	58
4	4.0	5.6	40	5,8	45
5	4.2	5.2	23.8	5.8	38.1
6	3.9	4.8	23	6.2	59
7	4.4	5.4	22,6	6.4	45.5
8	3.2	4.8	50	6	87.4
X±SD	0.8±0.1	4,9±1.9	27.1±11.1	6.01±0.2	54±15,5

CONCLUSIONS

- The malabsorption syndrome in dogs, can be treated by a combination of dietary therapy (low-fat, low-fiber, highly digestible diet) and pharmacological treatment (administering immuno-suppressive drugs, like prednisone and metronidazole).
- In canine malabsorption syndrome, the combinations of prednisone and metronidazole potentiate their immuno-suppressive action.

Acknowledgements:

The research was carried out as part of an extensive study, the preliminary results being part of the PhD Thesis "Study regarding the optimization of the clinical-diagnostic and therapeutic approach in maldigestion and malabsorption syndromes".



References:

- 1.Sartor R.B. Microbial Influences in Inflammatory Bowel Diseases. Gastroenterology. 2008; 134:577–594.
- 2.Semrad C. Approach to the Patient with Diarrhea and Malabsorption. Goldman's Cecil Medicine. 2012 : 895–913.