Kyrychko B.P., Doctor of Veterinary Science,

Zvenigorodskaya T.V., graduate

Poltava State Agrarian Academy

FEATURES PATHOGENESIS AND TREATMENT OF PERIODONTAL DISEASE IN DOMESTIC CATS

Reviewer – Doctor of Veterinary Science, Professor M. V. Skrypka

Found that when periodontal disease detected increased ESR, glucose, and gamma-globulin, reducing the number of red blood cells and white blood cells in the blood. In oral fluid celebrated hyperproteinemia and hyperglycemia. The dependence of the level of catalase and malondialdehyde during treatment. The combination of conservative and surgical treatment of inflammatory periodontal diseases in cats and implants "Biomin" make a positive impact.

Keywords: *domestic cats, periodontitis, gingivitis, treatment.*

Statement of the problem. Veterinary dentistry small pets – new and relevant part in clinical veterinary surgery. Its importance is due to the increase in number of pet dogs and cats, as well as an increase in the incidence of disease zuboschelepovoyi system. In recent years, veterinary dentistry is developing rapidly, due to the improvement of dental technology and treatment methods. However, in our country studies in this area are sporadic.

In clinical practice, there are more animals with diseases that are localized in the oral cavity. The study of the literature of dentistry for small animals showed that domestic researchers give insufficient attention to this problem, but most of the information in this regard is found only in a foreign authors. Domestic sources of veterinary dentistry small pets confined mainly to the various posts of practicing veterinarians, and are popular scientific nature.

Analysis of major studies and publications which discuss the problem. Periodontal diseases are the largest group of diseases of the oral cavity in cats. Changed the type of feeding, unbalanced diet, partial self-cleaning teeth and violations of selective screening rule to combat their own defense mechanisms of the pet. Caries, pulpitis, malocclusion, dental deformity, periodontal disease cause discomfort animal, causing complications in the digestive, cardiovascular and respiratory systems.

According to Austrian researchers, periodontal disease recorded in 25-50% of cats [1, 6]. Among periodontal disease in dogs occur most frequently gingivitis. The second highest prevalence of periodontal disease are, which include periodontitis of varying degrees of complexity and periodontal disease. Periodontal disease recorded mostly in animals adulthood. The reasons are diverse - both local and general. Genetic predisposition, especially rock and exterior, a

developmental disorder of the skeleton leading to the formation of incorrect and incomplete occlusion of the teeth. This, in turn, contributes to the accumulation layers and tartar, which is one of the most important pathogenic factor in the development parodontopatiy [1, 4].

Purpose. Clinical and experimental study of periodontal disease pathogenesis and suggest effective methods for their treatment.

Materials and methods. Research materials were samples of blood and oral fluid selected in cats aged three to eight years in which periodontal disease were recorded and blood samples from clinically healthy animals for comparison. Blood samples for laboratory tests were taken before treatment, on the 10th and 20th day after treatment. Conducted complete blood count and biochemistry by standard methods.

The content of malondialdehyde were measured in a test of tiobarbiturovoyu acid by the method of LI Andreeva et al. Determination of catalase (CAT, 1.11.1.6 CF) was performed by MA Koroliuk et al [2]. Determination of serum lizotsymnoyi conducted method in the modification of zoohygiene UNDIEV [5], as well as test culture used M. lysodeikticus (strain 2655). Sick animals were treated by the method developed by us.

Studies. Sick animals were divided into two groups: the first - animals with signs of gingivitis, the second - animals with signs of periodontitis. Each group was divided into two subgroups, differing treatment. The animals of both groups spent cleaning and polishing of teeth by ultrasonography skelera UDS-L and portable dental unit BUS-02. The first group used the application of ointment Methyluracilum + miramistin for one subgroup of cats and gel "Critters" - for the second.

The second group was made indoor and outdoor curettage (depending on the extent of the disease) and, in some cases, applied ceramic implants with hydroxyapatite and tricalcium phosphate "Biomin" [2, 6]. After surgery was prescribed antibiotics, introduction of the diet vitamins "Fitominy to the teeth and forms the skeleton for cats" and applications. The animals of both groups used the drug "Rumosol", which has antioxidant, immunostimulant, hepatoprotective and ranozahoyuyuchu action. Results indicators of changes in blood and oral fluid after treatment are shown in Table. 1

1. Some parameters of blood and oral fluid for the treatment of inflammatory periodontal disease, M ± m

Index	Clinically healthy animals (n=3)	Groups of animals	Before treatment	The period of study, day	
				10	20
Red blood cells, T / L	6,0±0,2	1	4,8±0,5	5,5±0,5	6,8±0,7*
		2	3,3±0,41•	4,2±0,23	5,7±0,3***

White blood cells, C / L	9,3±1,1	1	10,4±1,02	11±0,64	10,4±0,8
		2	5,2±0,7•	7,4±0,52	8,2±1,03
ESR, mm / h	3,75±0,52	1	5,2±1,8	4,2±0,84	3,7±0,53
		2	16,5±5,2•	10,3±2,1	4,3±0,9*
Total protein (serum) g / l	55,4±4,11	1	71,42±3,6•	59,6±4,2*	49,5±2,1***
		2	74,5±4•	60,7±4*	58±3**
Total protein (in oral fluid) g / l	11,3±0,51	1	20,3±2,4••	15,6±2,2	10,5±0,8**
		2	17,6±1,7••	16,4±1,84	12±1,2*
Catalase, mkkat / l	594,0±18,0	1	519±53	656,2±13*	601,5±27,3**
		2	545±11,4•	699±15,3***	618±14,2***
Malondialdehyde, umol / l	3,45±0,7	1	4,8±0,6	4,5±0,9	3,32±0,3*
		2	4,62±0,3	3,61±0,3*	3,12±0,6*
Lizotsymna activity (serum),%	18,0±0,53	1	4,8±0,9•••	5,6±1,1	7,8±0,8*
		2	5,5±0,72•••	6,2±1,23	6,85±0,78
Lizotsymna activity (in oral fluid),%	53,0±3,1	1	47,5±2,3	43,1±1,8	40,3±1,52*
		2	35,4±1,2•••	40,2±2	40,6±1,8*
Glucose (serum) mmol / l	4,7±0,03	1	5,42±0,04•••	4,91±0,1***	4,6±0,03***
		2	9,2±0,04•••	7,46±0,05***	6,53±0,03***
Glucose (serum) mmol / l	1,02±0,4	1	3,65±0,5••	2,4±0,04*	1,1±0,3***
		2	4,1±0,4•••	3,5±0,2	2,75±0,4*

Note. * - P <0.05, ** - P <0.01, *** - p <0.001 as compared with those before treatment.
• - P <0,05, •• - P <0,01, ••• - p <0.001 compared with clinically healthy animals

Research morphological composition of blood in cats with signs of gingivitis and periodontitis to treatment found fewer red blood cells, increase in ESR, hyperglycemia and albuminosis. Increased blood glucose and total protein content were recorded also in oral fluid. In periodontitis noted leykotsytopeniyu and neutrophilia with a shift to the right nucleus, indicating a chronic inflammatory response in animals. Study the dynamics of individual indicators of lipid peroxidation and antioxidant defense was found that for periodontal disease in cats decreases blood catalase activity and increased levels of malondialdehyde, compared with clinically healthy cats. This may be a violation of trophic tissue of the oral cavity, the presence of pathogenic organisms, tissue hypoxia. During treatment, 10 th and 20 th day noted increased activity of catalase (P <0.05 - with gingivitis and P <0.001 - in periodontitis) and reduced levels of malondialdehyde (P <.05). Blood glucose and protein decreased in the blood and in oral fluid. Important role in the onset and course of chronic inflammatory periodontal disease take local factors of nonspecific protection because of them, to some extent, depends on the body's ability to

resist at the beginning of infection. As can be seen from the table, for periodontal disease marked reduction lizotsymnoyi activity both in serum and in oral fluid. In the treatment of 10 th and 20 th day lizotsymnoyi level of activity remained low compared with clinically healthy animals. However, it should be noted that in the serum of animals first and second groups during treatment observed trend toward increased activity of lysozyme, compared with data before treatment (5,6 ± 1,1 at 20 th versus 4,8 ± 0 9 for gingivitis and 6,85 ± 0,78 on the 20th day compared to 5,5 ± 072 - with periodontitis). This may indicate activation of nonspecific defense.

Conclusions. 1. When periodontal disease is recorded rate increase ESR, glucose and total protein content, reducing the number of erythrocytes and leukocytes in the blood. In oral fluid and hyperglycemia observed albuminosis. 2. Before treatment was marked decrease in catalase activity and increased malondialdehyde during treatment recorded significant increase in catalase activity and a decrease in malondialdehyde, indicating the effectiveness of treatment. 3. During treatment reported tends to increase the activity of lysozyme, compared with clinically healthy cats, which may indicate the activation of nonspecific immunity.

REFERENCES

1. *Vasilyeva M.B.* Periodontal Vospalytelnые of the disease in dogs: Dis .... HP wet. sciences specials. 16.00.05 "Veterinary surgery" / M.B. – Vasilyeva St. Petersburg, 2009. S. – 71 – 101.

2. Research peroxidase oxidation of lipids and antioxidant defense of the organism in clinical practice: guidelines / [Kocharovskyy B.V., Novak V.L., V.P. Rudenko and others.] - Lviv, 2002. - 20 p.

3. *Karpovich E.A.* Renthenohrafycheskaya Clinical Diagnostics and Treatment of pulpitis promptly korennыh teeth in dogs: auto. Thesis. candidate. wet. sciences specials. 16.00.05 'Veterinary surgery' / E.A. Karpovich. - Moscow, 2010. - 18 p.

4. *Orehova LY* Periodontal Disease. / L.Y. Orekhova. – N: Polymedyapress, 2004. S. 107 – 140.

5. *Chumatchenko V.E.* Guidelines for determining estestvennoy resistance in animals selskohozyaystvennh veterynarnh for professionals / Chumatchenko V.E., Sychkar V.S. Olenych Y. - K: USHA, 1992. - 46 p.

6. Periodontal Surgery: A Clinical Atlas / Naoshi Sato / Yuzava, Japan, 2000. – 447p.