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Scientific Basis for the Treatment and Prevention of Large Abdominal Acidosis in Productive Cows

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Abstract

The article analyzes the results of clinical observations on the distribution and etiology, as well as experimental studies on the development of diagnostic and treatment-and-prophylactic measures of rumen acidosis in breeding cows in the conditions of farms of the republic.

Keywords: *Acidosis; Laminite, Lactic Acid and UCA; Large Abdominal Fluid Environment (PH); In Chronic Acidosis of the Large Abdomen (ACSA)*

Introduction

Diseases of imported pedigree cattle, in particular, diseases of digestion and metabolism, are one of the major obstacles to the implementation of agrarian reforms in the country and cause great economic damage to livestock.

Currently, due to the fact that the rations of livestock farms in the feeding of high-yielding cows are of a high concentrate type and lack of quality hay, there is a large abdominal acidosis due to diseases of the digestive system of livestock, including the anterior gastrointestinal tract.

It is known that high productivity of modern pedigree cows occurs as a result of well-balanced (primarily in terms of energy and protein) feeding. The peculiarity of feeds is that a steady increase in starch-rich grain concentrates and a decrease in the amount of nutrients rich in quality hay, high concentrate feeding leads to disruption of gastric fermentation and acidosis, as well as laminitis and other diseases with increased milk production. This is due to the intensive formation of a number of acids in the large intestine, including lactic acid, and the increase in starch fermentation, which leads to a decrease in the pH of the large intestine to 5.2-5.6 (in healthy animals = 6.5-7.5) [1].

Wheat, which currently makes up the bulk of concentrated foods, is quickly converted to lactic acid and UCO and fermented rapidly. Corn and oats are fermented slowly [2]. Therefore, diets high in wheat and barley pose a greater risk of acidosis than diets high in corn and oats. Despite the fact that there is

enough research by scientists around the world on the timely diagnosis, effective treatment and prevention of such diseases, different nutritional conditions; as well as the geo-ecological and endemic features of the place and the types and peculiarities of diseases of the anterior gastrointestinal tract in productive cattle by season, the effective diagnostic, treatment and prevention methods against them have not been developed. Therefore, to determine the nature of digestive processes in the anterior sections of productive cattle and the causes of disruption of these processes; scientific studies aimed at substantiating the dominant role of such disorders in metabolism, as well as the importance of laboratory tests of large abdominal fluid in the diagnosis of diseases of the anterior gastrointestinal tract are very relevant.

The purpose of the study. Early detection, effective treatment and development of a set of group prevention measures for large abdominal acidosis and metabolic disorders associated with this disease in pedigree cattle.

Object and methods of research. The research was conducted at "Agrabravo Chorvasi" farm in Aqdarya district of Samarkand region, "Ochilov Mahmudjon Dalasi" farm in Payarik district and "Yangi Asr" livestock farm in Kyzyltepa district of Navoi region. Clinical and laboratory examinations were carried out on the basis of the principle of medical examination of 30 cows at the farm "Agrabravo Chorvasi", 5 cows at the farm "Ochilov Mahmudjon Dalasi", 10 cows at the farm "Yangi Asr".

Analysis of the obtained results. Studies have shown that the incidence of large abdominal acidosis depends mainly on the age of 3-4 cows, i.e. the calving period, as well as the fact that there is a difference in the diet of cows with carcasses.

According to the scientist's observations, large abdominal acidosis often manifests itself in 3-4 months after the birth of the animal and then throughout the year, which leads to the treatment of animals [6].

The Main Findings and Results

The results of the study showed that in cows in the last months of gestation and during lactation, the environment (pH) in the large abdominal fluid shifts to acidity, the number of infusoria decreases relative to physiological norms, and their mobility decreases. The disease is acute in the last month of pregnancy and the first month of lactation, moderate in the second and third months, and chronic in the rest of lactation. This is due to the lack of active mats in cows, silage-concentrate type of cow's diet, low sugar-protein ratio, the content of fatty acids in corn silage, which is the main part of the diet, averaging 1.2% (the norm is 0.1-0.3% and can be explained by the occurrence of acidosis. I.P.Kondrakhin, V.I.Levchenko, (2005) of these data. Consistent with the results of research by Y.T. Khmelkov (2000).

Clinical trials determined the body temperature, respiratory rate, pulse, movement of the large abdominal wall, mucous membranes, liver border, and its reaction on palpation in cows (Table 1).

Table 1. Results of clinical examination of experimental cows (M ± m; N = 10)

Business name	Inspection time (months)	Number of breaths per minute, times	Tanaxaperati S^0	Pulse 1 minute, times	Large abdominal wall movement in 2 minutes, times	Liver border	Pain in the liver	Condition of mucous membranes	Appetite
Ochilov Mahmudjon field farm	3 births 4 months of lactation	12,4±0,46	38,1±0,18	54,32±2,63	1,4±0,14	+ -	-	+ -	+
Agrobravo cattle farm	2 births 5 months of lactation	15,4±0,57	37,84±0,14	72,12±2,69	1,2±0,22	+ -	-	+ -	+ -
New century pet farm	3 births 2 months of lactation	24,57±2,84	38,6±0,15	73,57±2,99	2,14±0,18	+ -	-	+ -	+ -
P<		0,05	0,05	0,05	0,01				

Note: Liver border: + not enlarged, + - enlarged; Appetite: + good, + - decreased, - lost; Condition of mucous membranes: - not yellowed, + - partially yellowed, + + strongly yellowed; whether there is pain in the liver: - no, + there is.

Laboratory tests revealed the pH of the large abdominal fluid, the number of infusoria, the species composition of the infusoria, and the functional activity of the microorganisms (Table 2).

Volatile fatty acids (VOCs) are rarely used when lactic acid is increased in the large abdomen of cattle because it takes 3-4 weeks for the Megasphaera elsdenii bacterium involved in VOCs synthesis to multiply in the large intestine, and 2-3 days for lactic acid bacteria to multiply. Thus, when the amount of concentrates in the diet is higher than the rate of growth of lactic acid bacteria, lactic acid accumulates in the large abdomen, lowering the pH and the amount of VOCs.

Several groups of bacteria in the large abdomen (Megasphaera elsdenii, S. ruminantum) use fermented lactic acid for the synthesis of propionic acid, which prevents the accumulation of lactic acid in the large abdomen and thus normalizes the pH of the large abdomen [5].

The results of laboratory tests of blood samples from experimental cows are given in Table 3.

The table shows that the clinical performance of cows reared on all three farms, as well as the results of laboratory tests of large abdominal fluid, indicate the presence of chronic metabolic acidosis in cows.

Data from foreign researchers have shown a difference between acute, moderate, and chronic acidosis. In acute acidosis, the pH of the large abdomen is below 5.2, on average - the pH is in the range of 5.2 to 5.5. In chronic acidosis of the large abdomen (CALA), the figure ranges from 5.6 to 6.0. Unlike CALA during acute metabolic acidosis, the pH level can return to normal within a few hours [3].

He noted that the maintenance of the pH level for at least 3 hours, above 5.6, indicates the presence of chronic acidosis in animals. When the pH level decreases, the activity of the large abdominal microflora decreases, the appetite of cows decreases, the temperature rises, diarrhea (diarrhea), lameness (laminitis), enlargement of the liver, tympanum and sudden death are observed.

According to the traditional method of treatment of acute and moderate stages of the disease of large abdominal acidosis of cows (Acidosis ruminis), cows are initially fasted for 6 hours. The stomach is washed with a 3% sodium bicarbonate solution using a probe and 1-2 liters of healthy animal cataract fluid is ingested. On the left side every 4-5 hours for 10-15 minutes rubbed counterclockwise 1-2 times a day. Drink 10 ml of chemiritsa tincture diluted in 500 ml of water. Intravenous administration of a complex hypertonic solution (200 ml of 5% sodium chloride, 200 ml of 40% glucose, 10 ml of ascorbic acid, 10 ml of B complex vitamins, and 1 ml of 20% caffeine) is administered intravenously. Antibiotics in the amount of 5-10 thousand XB/kg are used. 200 ml of alcohol-yeast mixture is drunk 2 times a day. An active trip is scheduled. Quality raw foods are included in the diet (Bakirov B., 2015) [4].

Table 2. Results of laboratory testing of large abdominal fluid samples in experimental cows (M ± m; N = 10)

Business name	Inspection time (months)	pH	Number of infusions, thousand / ml	Infusion type, 100%				Lactic acid content, Mmol / l	Number of bacteria, billion / ml	Bacterial type, 100%		Functional activity of infusoria (per minute)
				Isotricha Dasytricha	Entodinium	Diplodinium	Ophryoscolex			*Megasphaera S. ruminantum*	Lactobacillus Bifidobacteriu	
Ochilov Mahmudjon dalasi farm	3 Birth 4 months of lactation	5,85±0,2	204 ±8,54	2	51	37	10	10,0±6,2	14,08±0,72	8,73	91,27	26,0±0,5
Agrobravo cattle farm	2 Birth 5 months of lactation	5,76±0,4	214 ±7,15	1	54	38	7	9,0±0,5	18,06±0,57	7,11	92,89	32,0±0,87
Yangi Asr farm	3 Birth 2 months of lactation	5,38±0,1	254 ±5,6	2,5	58	38	1,5	7,0±0,75	25,46±0,42	5,42	94,37	20,0±0,75
P<		0,01	0,05					0,01	0,05			0,05

Table 3. Results of morpho-biochemical examination of blood samples of experimental cows (M ± m; N = 10)

Business name	Inspection time (months)	Hemoglobin, g / l	Number of erythrocytes, mln / µl	Glucose, Mmol / l	Total protein, g / l	Ketone bodies, g / l	Number of leukocytes, thousand / ml
Ochilov Mahmudjon dalasi farm	3 Birth 4 months of lactation	98,9±1,04	4,84±0,02	2,19±0,08	54,94±1,22	66,81±14,16	10,54±0,81
Agrobravo cattle farm	2 Birth 5 months of lactation	100,6±1,24	4,88±0,2	2,20±0,03	64,88±2,26	84,22±12,64	11,62±0,75
Yangi Asr farm	3 Birth 2 months of lactation	92,57±7,92	4,15±0,14	2,26±0,05	77,25±1,44	74,68±15,27	9,74±0,65
P<		0,05	0,01	0,01	0,05	0,05	0,05

Experiments have shown that the use of the above treatments is appropriate in acute and moderate cases of large abdominal acidosis. However, among cows, the chronic stage of basal acidosis is mainly in 80-85% of cows with this disease on the farm, compared to the acute and moderate stages of the disease. Therefore, it has been found that age-appropriate experiments are needed to treat all stages of large abdominal acidosis.

The experiments were carried out on Holstein cows bred on the farm "Agro Bravo Chorvasi" in Akdarya district of Samarkand region. Cows with large abdominal acidosis were isolated on the farm, each with 5 to 6 groups, and a total of 30 cows with acute, moderate, and chronic stages of the disease were selected, and experiments were continued for a total of 90 days. Cows were inspected at the beginning of the experiment and once every 30 days.

In addition to the traditional treatment methods mentioned above in the treatment of cows in this experiment, the following scientific experiments were performed.

The experimental scheme is given in Table 4, and the composition of the periparts used in the experiment is given in Table 5.

Table 4. Scheme of experiments in the treatment of large abdominal acidosis (Agro-Bravo cattleF / x; M ± m; N = 30)

Groups	Experimental tools, 1 per 1 day								
	Farm ration	GELAMIN Varioferm 100, gram	GELAMIN Varioferm 150, gram	CCOC	Mineral salts	Alcoholic yeast mixture	Tea soda ($NaHCO_3$)	Essential forte	Multivit + minerals
1	*2*	*3*	*4*	*5*	*6*	*7*	*9*	*10*	*11*
I	+								
II	+	+							
III	+		+						
IV	+			+		+	+		
V	+	+		+		+	+		
VI	+	+		+	+	+	+	+	+

Table 5. Composition of drugs and nutritional supplements used in treatment and prevention experiments (Agro-Bravo cattleF / x; M ± m; N = 30)

PREMIX CONTENT	
Organic matter%	
Crude protein	13,8
Crude oil	2,6
Raw fiber	10,9
Raw ash	4,6
Macro elements	
Calcium	0,5
Phosphorus	0,5
Sodium	0,1
Magnesium	0,2
Microorganism content, per 100 g	
Saccharomycescerevisie	0,9 * 10 ^9
Aspergiliusoryzae	4 гр
Tea soda ($NaHCO_3$)	
For therapeutic purposes	50-55 гр
In order to prevent	30-35 гр

Mineral salts, 1 per 1 day	
Ferrous sulfate	1 g
Mis sulfate	100 mg
Koboly chloride	10 mg
Manganese sulfate	100 mg
Zinc sulfate	100 mg
Ca iodine	3 mg
Biostimulator aimed at restoring liver function 1 head per day	
Essential forte	10 мл
1 head every 15 days	
Multivit + minerals	20 мл

Table 6. Results of morpho-biochemical examination of blood of experimental cows (Agro-Bravo cattleF / x; M ± m; N = 30)

Groups	Check time	Hemoglobin, g / l	Number of erythrocytes, mln / µl	Glucose, Mmol / l	Total protein, g / l	The amount of ketone bodies, g / l	Number of leukocytes, thousand / ml	Лейкограмма, %						
								Basophil	Eosinafil	Нейтрофил			Lymphocytes	Monocytes
										Age	T. core	S. core		
Control I	The beginning of the experiment	99,65±1,9	4,87±0,04	2,42±0,08	65,13±1,04	82,0±3,54	7,46±0,08	8,6	3,2	3,2	2,4	3,0	67,5	12,1
	90 days	98.92±1,4	4,53±0,05	2,20±0,045	52,64±1,67	99,0±4,25	7,73±0,06	8,8	3,4	3,3	3,6	3,5	66,2	11,2
Control II	The beginning of the experiment	99,42±1,8	4,75±0,04	2,28±0,08	59,2±2,28	85,0±2,88	7,24±0,04	8,5	4,0	3,6	3,7	4,2	65,5	10,5
	90 days	100,21±1,35	5,03±0,06	2,41±0,032	73,14±1,9	68,0±4,82	7,99±0,08	6,9	4,8	2,4	3,6	4,9	67,9	9,5
Control III	The beginning of the experiment	99,26±1,82	4,66±0,03	2,33±0,017	58,67±1,20	73,0±3,5	8,14±0,08	8,4	3,3	2,6	4,0	3,6	66,8	11,3
	90 days	100,83±1,45	5,01±0,04	2,48±0,04	71,56±1,38	64,0±5,54	8,24±0,06	7,6	3,9	2,3	3,1	4,6	68,6	9,9
Control IV	The beginning of the experiment	99,48±1,84	4,81±0,04	2,36±0,08	61,37±1,23	84,0±4,92	7,62±0,02	8,9	3,5	3,1	2,6	4,0	66,1	11,8
	90 days	98,74±1,29	4,41±0,02	2,23±0,035	54,23±0,89	77,0±4,63	8,09±0,05	7,1	4,3	2,5	3,2	8,6	64,9	9,4
Control V	The beginning of the experiment	99,28±1,53	4,79±0,06	2,29±0,05	65,14±2,95	93,0±6,45	7,92±0,07	8,2	3,8	3,3	3,4	3,7	6,5	11,1
	90 days	101,27±1,32	5,02±0,02	2,64±0,02	75,12±0,31	58,0±3,26	8,18±0,02	4,1	4,7	1,9	3,6	11,8	65,5	8,4
Control VI	The beginning of the experiment	99,55±1,27	4,83±0,07	2,22±0,05	58,36±0,53	86,0±4,55	8,33±0,08	8,0	4,2	2,9	3,2	3,6	69,1	10,4
	90 days	110,29±0,96	5,35±0,05	2,81±0,02	78,68±0,27	43.0±6,71	8,33±0,04	2,4	5,6	1,3	3,8	19,4	60,1	7,4
P<		0,05	0,05	0.01	0,05	0,05	0,01							

Table 7. Results of laboratory examination of large abdominal fluid in experimental cows (Agro-Bravo cattle F / x; M ± m; N = 30)

Groups	Check time	pH	Number of infusions, thousand / ml	Infusion type, 100%			Lactic acid content, Mmol / l		Бактериялар сони, милярд/мл	Bacterial type, 100%		Functional activity of infusoria (per minute)
				IsotrichaDasytricha	Entodinium	Diplodinium	Ophryoscolex			*MegasphaeraS.RuminantumPropionibacterium*	*LactobacillusBifidobacteriuStreptococcus*	
I назорат	Таж боши	5,5±0,05	234,0±5,54	1,0	58,0	34,0	7,0	7,0±0,45	23,19±1,37	8,4	91,6	22,0±0.66
	90 куни	5,8±0,06	192,0±6,83	0,2	51,8	35,0	13,0	10,0±0,17	14,81±0,76	8,3	91,7	33,0±0.82
II тажриба	Таж боши	5,4±0,04	226,0±7,13	0,8	57,2	35,0	7,0	8,0±0,35	21,15±1,12	8,5	91,5	25,0±0.74
	90 куни	6,0±0,06	314,0±11,2	1,2	64,0	32,0	3,8	7,0±0,12	30,38±1,00	12,4	87,6	18,0±1.15
III тажриба	Таж боши	5,4±0,03	244,0±4,21	0,6	55,0	33,8	10,6	6,0±0,31	25,54±0,92	8,6	91,4	27,0±0.95
	90 куни	5,9±0,06	326,0±12,14	1,0	62,0	32,0	5,0	8,0±0,15	30,50±0,71	13,2	86,8	20,0±0.88
IV тажриба	Таж боши	5,3±0,04	228,0±5,13	1,0	56,0	33,0	10,0	7,0 ±0,67	20,62±0,78	8,8	91,2	22,0±1.26
	90 куни	6,3±0,08	334,0±16,34	1,2	60,6	32,0	6,2	8,0±0,1	22,22±0,76	11,8	88,2	24,0±0.75
V тажриба	Таж боши	5,5±0,04	249,0±4,12	0,6	58,0	34,0	7,0	6,0±0,26	23,34±0,82	9,1	90,9	26,0±0.77
	90 куни	6,8±0,07	720,0±16,2	2,2	69,0	28,3	0,5	5,0±0,09	31,54±0,97	19,3	80,7	7,0±0.48
VI тажриба	Таж боши	5,4±0,03	223,0±7,89	0,8	56,2	34,0	9,0	7,0±0,52	22,34±0,87	11,4	88,6	24,0±0.84
	90 куни	7,1±0,08	735,0±7,52	2,6	69,0	28,0	0,4	2,0±0,09	32,88±0,75	19,8	80,2	4,0±0.36
P<		0,01	0,05					0,01	0,05			0,05

Tables 6 and 7 show the changes in blood and large abdominal fluid samples taken in the beginning and end 90-day trials of cows in the groups of drugs and nutritional supplements used in the experiments.

The hemoglobin level in the blood of the experimental cows averaged 99.65 ± 1.9 g / l at the beginning of the experiment in the I-control group, 98.92 ± 1.4 g / l on the 90th day, and an average of 99.42 ± 1 at the beginning of the II-experimental group. 8 g / l, mean 100.21 ± 1.35 g / l on day 90, mean 99.26 ± 1.82 g / l at the beginning of experimental group III, mean 100.83 ± 1.45 on day 90 g / l, mean 99.48 ± 1.84 g / l at the beginning of the IV-experimental group, 98.74 ± 1.29 g / l on the 90th day, 99.28 ± 1 at the beginning of the V-experimental group, 53 g / l, averaging 101.27 ± 1.32 g / l on day 90, averaging 99.55 ± 1.27 g / l at the beginning of experimental group VI, and an average of 110.29 ± 0.96 g on day 90. / l (norm 99-129 g / l) (R <0.05).

The number of erythrocytes in the blood in the I-control group averaged 4.87 ± 0.04 million / μl at the beginning of the experiment; An average of 4.53 ± 0.05 million / μl on day 90, an average of 4.75 ± 0.04 million / μl at the beginning of experimental group II, an average of 5.03 ± 0.06 million / μl on day 90, III - in the experimental group the average was 4.66 ± 0.03 million / μl at the beginning, on the 90th day the average was 5.01 ± 0.04 million / μl, in the IV experimental group the average was 4.81 ± 0.04

million / μl at the beginning, 90- on average 4.41 ± 0.02 million / μl per day, on average 4.79 ± 0.06 million / μl at the beginning of the V-experimental group, on average on the 90th day 5.02 ± 0.02 million / μl, on average at the beginning of the VI-experimental group4 , 83 ± 0.07 million / μl, averaging 5.35 ± 0.05 million / μl on day 90 (norm 5.5–7.5 million / μl) (R <0.05).

Blood glucose levels in cows were averaged 2.42 ± 0.08 mmol / l at the beginning of the experiment in control group I, an average of 2.20 ± 0.045 mmol / l at day 90, and an average of 2.28 ± 0.08 mmol at the beginning of experimental group II. / l, averaged 2.41 ± 0.032 mmol / l on day 90, averaged 2.33 ± 0.017 mmol / l at the beginning of experimental group III, and an average of 2.48 ± 0.04 mmol / l on day 90; In the IV experimental group, the mean was 2.36 ± 0.08 mmol / l at the beginning, on the 90th day, the mean was 2.23 ± 0.035 mmol / l, in the 5th experimental group, the mean was 2.29 ± 0.05 mmol / l at the beginning, 90- an average of 2.64 ± 0.02 mmol / l per day, an average of 2.22 ± 0.05 mmol / l at the beginning of the VI-experimental group; On day 90, the mean was 2.81 ± 0.02 mmol / l (norm 2.22–3.33 mmol / l) (R <0.01).

The decrease in blood glucose during lactation (hypoglycemia) can be explained by the low level of satisfaction of energy needs of cows during lactation.

The total serum protein of the experimental cows averaged 65.13 ± 1.04 g / l at the beginning of the experiment in the I-control group, 52.64 ± 1.67 g / l on the 90th day, and 59.2 at the beginning in the II-experimental group. ± 2.28 g / l, mean 73.14 ± 1.9 g / l on day 90, mean 58.67 ± 1.20 g / l at the beginning of experimental group III, mean 71.56 ± 1 on day 90 , 38 g / l, mean 61.37 ± 1.23 g / l at the beginning of the IV experimental group, 54.23 ± 0.89 g / l on the 90th day, mean 65.14 ± at the beginning of the V experimental group 2.95 g / l, averaging 75.12 ± 0.31 g / l on day 90, averaging 58.36 ± 0.53 g / l at the beginning of experimental group VI, averaging 78.68 ± 0 on day 90, 27 g / l (norm - 72-86 g / l) (R <0.05).

The amount of ketone bodies in the blood of cows was 82.0 ± 3.54 g / l at the beginning of the experiment in the I control group, 99.0 ± 4.25 g / l on the 90th day, and 85.0 ± 2 at the beginning in the II experimental group. , 88 g / l, mean 68.0 ± 4.82 g / l on day 90, mean 73.0 ± 3.5 g / l at the beginning of experimental group III, mean 64.0 ± 5.54 on day 90 g / l, mean 84.0 ± 4.92 g / l at the beginning of the IV experimental group, 77.0 ± 4.63 g / l on the 90th day, 93.0 ± 6 at the beginning of the V-experimental group, 45 g / l, mean 58.0 ± 3.26 g / l on day 90, mean 86.0 ± 4.55 g / l at the beginning of experimental group VI, mean 43.0 ± 6.71 g / l on day 90 (norm - 20-40 g / l) (R <0.05).

The number of leukocytes in the blood of cows averaged 7.46 ± 0.08 thousand / ml at the beginning of the experiment in control group I, an average of 7.73 ± 0.06 thousand / ml on day 90, and an average of 7.24 ± 0 at the beginning in experimental group II. 04 thousand / ml, averaging 7.99 ± 0.08 thousand / ml on day 90, averaging 8.14 ± 0.08 thousand / ml at the beginning of experimental group III, and an average of 8.24 ± 0.06 thousand on day 90. / ml, an average of 7.62 ± 0.02 thousand / ml at the beginning of the IV experimental group, an average of 8.09 ± 0.05 thousand / ml on the 90th day, an average of 7.92 ± 0.07 at the beginning of the V-experimental group thousand / ml, averaged 8.18 ± 0.02 thousand / ml on day 90, averaged 8.33 ± 0.08 thousand / ml at the beginning of experimental group VI, and an average of 8.33 ± 0.04 thousand / ml on day 90. ml (norm 4.5-12 thousand / ml) (R <0.01).

The pH of the large abdominal fluid obtained from the experimental cows averaged 5.5 ± 0.05 at the beginning of the experiment in the I-control group, 5.8 ± 0.06 on the 90th day, and 5.4 ± 0.04 at the beginning in the II-experimental group. An average of 6.0 ± 0.06 on day 90, an average of 5.4 ± 0.03 at the beginning of experimental group III, an average of 5.9 ± 0.06 on day 90, an average of 5.3 ± at the beginning of experimental group IV 0.04, mean 6.3 ± 0.08 on day 90, mean 5.5 ± 0.04 at the beginning of the V-experimental group, mean 6.8 ± 0.07 on the 90th day, mean at the beginning of the VI-experimental group 5.4 ± 0.03, averaging 7.1 ± 0.08 (normal 6.5–7.5) on day 90 (P <0.01).

The number of infusions in the large abdominal fluid of cows averaged 234.0 ± 5.54 thousand / ml at the beginning of the experiment in control group I, an average of 192.0 ± 6.83 thousand / ml on day 90, and an average of 226.0 ± at the beginning in experimental group II. 7.13 thousand / ml, an average of 314.0

± 11.2 thousand / ml on the 90th day, an average of 244.0 ± 4.21 thousand / ml at the beginning of the III experimental group, an average of 326.0 ± 12 on the 90th day, 14 thousand / ml, on average 228.0 ± 5.13 thousand / ml at the beginning of the IV experimental group, on average on the 90th day 334.0 ± 16.34 thousand / ml, on average at the beginning of the V-experimental group 249.0 ± 4 , 12 thousand / ml, averaging 720.0 ± 16.2 thousand / ml on the 90th day, an average of 223.0 ± 7.89 thousand / ml at the beginning of the VI experimental group, an average of 735.0 ± 7.52 on the 90th day thousand / ml (norm from 700 thousand to 1-2 million / ml) (P <0.05).

At the beginning of the experiment in the I-control group of infusoria in the large abdominal fluid of experimental cows averaged *Isotricha*, *Dasytrichaturkumi* averaged 1% / ml, *Entodinium turkumio* average 58% / ml, *Diplodinium turkumio* average 34% / ml, *Ophryoscolexturkumio* average 7% / ml, on day 90 average 0.2% / ml, *Entodinium turkumio* average 51% / ml, *Diplodinium turkumio* average 35% ml, *Ophryoscolexturkumio* average 13% / ml, at the beginning of the II experimental group average *Isotricha*, *Dasytrichaturkumi* average 0.8% / ml, *Entodinium* turkumio average 57% / ml ml, Diplodinium turkumio average 35% / ml, *Ophryoscolexturkumio* average 7% / ml, 90-day average *Isotricha*, *Dasytrichaturkumi* average 1.2% / ml, Entodinium *turkumio* average 54% / ml, *Diplodinium turkumio* average 32% / ml, *Ophryoscolextur* 3% ml, the average *Isotricha* at the beginning of the III experimental group, *Dasytrichaturkumi* average 0.6% / ml, *Entodinium turkumio* average 55% / ml, *Diplodinium turkumio* average 33% / ml, *Ophryoscolexturkumio* average 10.6% / ml, average 90 days *Isotricha*, *Dasytric haturkumi* average 1% / ml, *Entodinium turkumio* average 62% / ml, *Diplodinium turkumio* average 32% / ml, *Ophryoscolexturkumio* average 5% / ml, at the beginning of the IV experimental group average *Isotricha*, *Dasytrichaturkumi* average 1% / ml, *Entodinium turkumio* average 56% *Diplodinium turkumio* average 33% / ml, *Ophryoscolexturkumio* average 10% / ml, 90-day average *Isotricha*, *Dasytrichaturkumi* average 1.2% / ml, *Entodinium turkumio* average 60.6% / ml, *Diplodinium turkumio* average 32% / ml, *Ophryoscolexturio* 6% / ml ml, average Isotricha at the beginning of the V-experimental group, *Dasytrichaturkumi* average 0.6% / ml, *Entodinium turkumio* average 58% / ml, *Diplodinium turkumio* average 34% / ml, *Ophryoscolexturkumio* average 7% / ml, 90-day average *Isotricha*, *Dasytrichaturkumi* 2% / ml, *Entodinium turmeric* average 69% / ml, *Diplodinium turmeric* average 28.3% / ml, *Ophryoscolexturkumio* average 0.5% / ml, at the beginning of the VI experimental group average Isotricha, *Dasytrichaturkumi* average 0.8% / ml, *Entodinium turkumio* average 56 , 2% / ml, *Diplodinium turkumio* average 34% / ml, *Ophryoscolext urkumio* average 9% / ml, 90-day average *Isotricha*, *Dasytrichaturkumi* average 2.6% / ml, *Entodinium turkumio* average 69% / ml, *Diplodinium turkumio* average 28% / ml, *Ophryoscolexturkumio* average 0.4% / ml.

The type of infusoria was studied mainly on the basis of data from the authors (I. G. Pivnyak, B.V. Tarakanov) [7]. Our investigations revealed the presence of *Isotricha*, *Dasytricha*, *Entodinium*, *Diplodinium*, and *Ophryoscolex* species in the large abdominal fluid of farm cows, but it was found that these infusoria underwent drastic changes in body composition and proportions.

In the study of the amount of lactic acid in the large abdominal fluid from cows, the mean in the control group I was 7.0 ± 0.45 Mmol / l at the beginning of the experiment, the average on the 90th day was 10.0 ± 0.17 Mmol / l, in the experimental group II 8.0 ± 0.35 Mmol / l, mean 7.0 ± 0.12 Mmol / l on day 90, mean 6.0 ± 0.31 Mmol / l at the beginning of experimental group III, mean 8.0 on day 90 ± 0.15 Mmol / l, mean 7.0 ± 0.67 Mmol / l at the beginning of experimental group IV, mean 8.0 ± 0.1 Mmol / l at day 90, mean 6 at the beginning of experimental group V, 0 ± 0.26 Mmol / l, mean 5.0 ± 0.09 Mmol / l on day 90, mean 7.0 ± 0.52 Mmol / l at the beginning of experimental group VI, mean 2.0 ± on day 90 0.09 Mmol / l (1.5–5.0 Mmol / l in healthy animals) (P <0.01).

The number of bacteria in the large abdominal fluid of cows in the groups averaged 23.19 ± 1.37 billion / ml at the beginning of the experiment in control group I, an average of 14.81 ± 0.76 billion / ml on day 90, and an average of 21 at the beginning in experimental group II. 15 ± 1.12 billion / ml, mean 30.38 ± 1.00 billion / ml on day 90, mean 25.54 ± 0.92 billion / ml at the beginning of experimental group III, mean 30.50 ± 0 on day 90 , 71 billion / ml, mean 20.62 ± 0.78 billion / ml at the beginning of the IV experimental group, 22.22 ± 0.76 billion / ml at the beginning of the 90th day, 23.34 ± average at the

beginning of the V-experimental group 0.82 billion / ml, averaging 31.54 ± 0.97 billion / ml on day 90, an average of 22.34 ± 0.87 billion / ml at the beginning of Experiment Group VI, and an average of 32.88 ± 0 on day 90, 75 billion / ml (Georgievsky, 1990, normally 6 to 40 billion) (P <0.05).

Bacteria in the large abdominal fluid content of experimental cows in the I-control group at the beginning of the experiment were 8.4% of average lactic acid-absorbing bacteria, 91.6% of lactic acid-synthesizing bacteria, 8.3% of average lactic acid-absorbing bacteria on day 90, lactic acid-synthesizing bacteria 91.7%, in the II experimental group at the beginning of the average lactic acid assimilation bacteria 8.5%, lactic acid synthesis bacteria 91.6%, on the 90th day the average lactic acid assimilation bacteria 12.4%, lactic acid synthesis bacteria 87.6%, III In the experimental group, the average lactic acid-absorbing bacteria was 8.6%, lactic acid-synthesizing bacteria 91.4%, on the 90-day average lactic acid-absorbing bacteria 13.2%, lactic acid-synthesizing bacteria 86.8%. acid-assimilating bacteria 8.8%, lactic acid-synthesizing bacteria 91.2%, average lactic acid-absorbing bacteria on day 90 11.8%, lactic acid synthesizing bacteria 88.2%, ni, in the V-experimental group at the beginning of the average lactic acid-absorbing bacteria 9.1%, lactic acid-synthesizing bacteria 90.9%, on the 90th day the average lactic acid-absorbing bacteria 19.3% , lactic acid synthesizing bacteria 80.7%, ni, in the VI experimental group at the beginning of the average lactic acid assimilation bacteria 11.4%, lactic acid synthesizing bacteria 88.6%, on the 90th day the average lactic acid assimilation bacteria 19.8%, milk acid-synthesizing bacteria accounted for 80.2%.

The functional activity of infusoria in the large abdominal fluid of cows averaged 22.0 ± 0.66 minutes at the beginning of the experiment in the control group I, an average of 33.0 ± 0.82 minutes at the beginning of the 90th day, and an average of 25.0 ± 0.74 minutes at the beginning of the II experimental group. mean 18.0 ± 1.15 minutes, mean 27.0 ± 0.95 minutes at the beginning of experimental group III, mean 20.0 ± 0.88 minutes at the beginning of day 90, mean 22.0 ± 1.26 minutes at the beginning of experimental group IV, mean 90 at the beginning 24.0 ± 0.75 minutes, mean 26.0 ± 0.77 minutes at the beginning of the V-experiment group, mean 7.0 ± 0.48 minutes at the beginning of the 90th day, mean 24.0 ± 0.84 minutes at the beginning of the VI-experimental group, mean 90 days 4.0 ± 0.36 minutes (norm 3 minutes) (P <0.05).

In addition to traditional therapies for the treatment of chronic metabolic acidosis in cows, 20 ml of the drug Multivit + mineral was administered intramuscularly every 15 days. The microorganisms Saccharomyces cerevisie and Aspergilius oryzae in $NaHCO_3$ and special premix, which are constantly added to the feed, enhance the digestive processes in the large intestine of cows, as well as the development of beneficial species of infusoria and bacteria that are important for cows; resulting in a return of the number of microorganisms to normal and, as a result, an improvement in the productivity and health performance of cows.

In order to eliminate the metabolic factors that occur during acidosis, treatments aimed at restoring liver function were performed. For this purpose, an ampoule form of Essentsiale forte was used. This drug was administered intravenously once a day for 10 to 5 ml per cow.

It was also found that it is advisable to focus on adjusting the energy-protein ratio of the ration when feeding cows (cow rats. 1 o.b. 100-120 g of digestible protein and 80-100 g of sugar, and the sugar-protein ratio should be 0.8-1.2).

Conclusion

1. In the diagnosis of large abdominal acidosis in pedigree cows in the acute phase of the disease should take into account the type of diet, nutrition and quality of nutrients, as well as clinical examination to determine the decrease in appetite in the animal, decreased motility of the large abdominal wall. at the expense of acids), it is advisable to conduct laboratory tests to determine the number of infusoria and beneficial bacteria in it and changes in species composition.

2. In addition to the above-mentioned clinical and laboratory tests in the chronic form of large abdominal acidosis should be taken into account metabolic disorders and morpho-functional status of the liver, which are the pathogenetic consequences of the disease.

3. The principle of treatment of large abdominal acidosis in cows should represent the elimination not only of digestive processes in the anterior gastrointestinal tract, but also of profound metabolic and hepatopathic changes.

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