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IMPROVING THE TREATMENT OF CALF DYSPEPSIA

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Abstract
Dyspepsia is a polyetiological disease, accompanied by digestive disorders, diarrhea, weakness, dehydration and intoxication. Treatment of calf dyspepsia should be based on the etiopathogenetic principle and should be aimed at normalizing the digestive process, eliminating dysbacteriosis, dehydration and intoxication. The research was conducted at the cattle farm "Akbar shox Shavkat" in the Pastdarom district of the Samarkand region. 3 groups of 3 calves with dyspepsia were formed [1,5,15]. Calves in the first experimental group were fasted for 8 hours and during this time 10 ml/kg (300) ml Regidron solution was administered every hourAfter the fasting period, 1/3 of the cow's milk (333 ml) + an equal amount of warm physiological solution was added, and it was rinsed 3 times a day. 40 ml of artificial gastric juice (1 g of pepsin, 1.5 NSl, 100 ml of distilled water) was injected 15 minutes before giving colostrum. Vetom 1.2 (Bacillus subtilis VKPM I-10641) probiotic 50mg/kg (2 times a day) was injected every 8 hours from the second day of treatment until the clinical symptoms disappeared. Calves in the second experimental group were fed differently from the first experimental group 1.2. probiotic 50mg/kg (4 times a day) was administered every 6 hours, and citrated blood from additional cows was injected intramuscularly at a dose of 0.2 ml/kg (3 times in total). Calves in the third control group were treated in traditional ways: during 8 hours of fasting, they were fed 1 liter of warm physiological solution 4 times. Macrolan antibiotic was injected at a dose of 1 ml/10 kg once daily for 5 days. The best result was shown in the calves of the second experimental group. Treatment of dyspepsia in such a complex way reduces metabolic acidosis, intoxication, dehydration by correcting electrolyte imbalance in the body, improves digestion by normalizing intestinal biocenosis, and treats dysbacteriosis.

Keywords Diarrhea, intoxication, immunodeficiency, enzyme deficiency, autoimmune, hematocrit, immunoglobulins.

INTRODUCTION

A number of measures aimed at the intensive development of animal husbandry are being carried out in our republic. Highly productive cows were brought from abroad and are being cared for. Violations of the rules for keeping and feeding cows lead to metabolic disorders and the birth of hypotrophic calves. Dyspepsia and the death of such calves, an increase in the cost of treatment, and the removal of calves into disrepair to replenish the herd in the future bring great economic damage to farms [2,6,16]. According to Blazhnova M.V. (2004), 78.6% of calves were infected with non-communicable diseases, of which dyspepsia and gastrointestinal diseases

accounted for 53.6%. According to Anokhin B.M., (2004), Kondrakhin I.P., (2004), Fazullin H.V. (2005), 60-70% of calves under the age of 10 days suffer from gastrointestinal diseases and mortality reaches 9.9%, while the body's natural resistance to this disease is low, hypogammaglobulinemia and hypotrophy of calves suffer [3,7,17,22].

Calve dyspepsia is a disease with a complex etiology, and even after treatment, it has been found that they are subject to secondary pathologies due to low immunity. (Gracheva O.A., 2019, Volkova S.V., 2008, Novitsky A., 2009).

Eshburiev B.M. According to et al. (2017, 2018), dyspepsia disease is widespread among newborn calves in Uzbekistan, and the morbidity rate reaches 40-45% and the mortality rate reaches 30-32% in some farms [4,10].

Treatment of calf dyspepsia should be based on the etiopathogenetic principle and should be aimed at normalizing the digestive process, eliminating dysbacteriosis, dehydration and intoxication.

To combat dysbacteriosis, antibiotics, sulfonamides and nitrofuran preparations are used. Moreover, antibiotics must be selected after determining the sensitivity of the intestinal microflora to them. Traditional methods of treating sick calves with the use of antibacterial, sulfanilamide and nitrofuran preparations do not always lead to a positive effect, and often have a negative effect on the obligate microflora and the immune status of newborn calves. Irrational therapeutic tactics for the use of antibiotics, as well as their unreasonable widespread use, leads to the emergence and growth of resistance to drugs of pathogenic strains of microorganisms (Kamoshenkov A.R. 1998, Steiner T., 2006, Ivanov A.S., 2009, Khmylev A.G. ., 2019, Batrakov A. Ya., 2021,) [8,21].

To combat dehydration and restore disturbed osmotic pressure, isotonic or hypertonic solutions are administered. Hemotherapy, polyglobulins or gamma globulins are used intramuscularly as stimulating non-specific therapy for sick calves (Kondrakhin I.P., 2005, Norboyev Q.N., Bakirov B.B., Eshburiyev B.M., 2020). The current trend in the field of therapeutic and preventive measures for diseases of the gastrointestinal tract is the use of probiotics, among which lactic acid, propionic acid and bifidobacteria are recognized as the most promising (Tarakanov B.V., 1987, Danilevskaya N.V. 2006, Akimov D.A., 2015, Elenschleger A.A., 2020) [9,19]. In this regard, there has recently been a need to replace antibiotics with alternative, environmentally friendly means of protecting animal health (Novitsky A., 2009, Ivanenko O.V. 2013, Jimmy L. Howard D. 1993). Despite the progress made in the treatment and prevention of neonatal calf dyspepsia, there remains a problem associated with the development of effective, as well as cost-effective, treatment regimens for the diseaseTherefore, scientists and practitioners of veterinary medicine are faced with the task of developing a comprehensive method of therapy and treatment regimens for dyspepsia in calves, the introduction of which did not exclude the previously developed therapeutic and preventive measures, but improved the existing ones [10,11].

Materials and Methods). Experiments were conducted on calves up to 10 days old with dyspepsia at "Akbar shox Shavkat" cattle farm in Pastdargom district of Samarkand region. For this, 3 groups of 3 calves with dyspepsia were formed. The first and second experimental groups and the third control group were designated. Calves in the first experimental group were treated as follows: they were starved for 8 hours, and during this time, 10 ml/kg (300) ml of Regidron solution was administered every hour. After the fasting period, 1/3 of the cow's milk (333 ml) + an equal amount of warm physiological solution was added, and it was rinsed 3 times a day. 40 ml of artificial gastric juice (1 g of pepsin, 1.5 NSl, 100 ml of distilled water) was injected 15 minutes before giving colostrum. From the second day of treatment, Vetom 1.2 (Bacillus subtilis VKPM I-10641) probiotic 50mg/kg (2 times a day) was administered every 8 hours until the symptoms of diarrhea disappeared.

Calves in the second experimental group were injected with Vetom 1.2 (Bacillus subtilis VKPM I-10641) probiotic, different from the first

experimental group, at 50mg/kg (4 times a day) every 6 hours. Citrated blood from cows was injected intramuscularly at 0.2 ml/kg (3 times in total).

Calves in the third control group were treated conventionally. Starved for 8 hours. During this time, one liter of warm physiological solution was injected 4 times. Macrolan antibiotic was injected at a dose of 1 ml/10 kg once daily for 5 days.

The calves in the experiment underwent a clinical examination, and their physiological development, response to external influences, reception of cow's milk, functional status of mucous membranes, skin and skin covering, respiratory, cardiovascular, digestive and excretory systems were determined, the frequency of defecation, the consistency and color of feces attention was drawn.

The amount of hemoglobin in the blood was determined by hemoglobin - cyanide method (with acetone cyanohydrin), glucose (by color reaction with ortho-toluidine), total protein based on the biuret reaction and the "total protein" reagent, bilirubin, AST, ALT activity on the biochemical analyzer SYNCHRON CX4 PRO Beckman Coucter (USAMathematical-statistical analysis of numerical data obtained from the results of scientific research was carried out using Student's and Fisher's criteria in a Microsoft Excel spreadsheet.

Results et Discussion. At the beginning of the experiments, in the calves with dyspepsia, the stool was liquid and watery in consistency, flowing-yellow in color, smelly when used, and containing a large amount of mucous substance mixed in. From the 2nd day of the disease, diarrhea became constant, smelly, mucous substance, sometimes mixed with blood. white diarrhoea, restlessness, fatigue, foot stomping, severe abdominal pain and groaning were noted.

At the beginning of the experiments, in the calves with dyspepsia in all groups, clinical signs such as general weakness, low movement, diarrhea, odor when handled, decreased sucking reflexes, decreased skin elasticity, contamination of the anus area, drying of the nasal glass, increased body coating were observed. By the 3rd day of treatment, the general condition of the calves in the first experimental group was improved, the dung thickened, the sucking reflexes accelerated, and the movement of the calves improved. The average body temperature was 38.9±0.170C, the number of heart beats per minute was 124.4±2.45, and the number of respiratory movements was 34.2±0.36.

In the second experimental group, calves with dyspepsia in the 1-2 days of treatment showed satisfactory clinical and physiological indicators, the general condition was satisfactory, the appetite was preserved, the mucous membranes were white, the skin coating was smooth and glossy, the average body temperature was 38.7±0.260C, the heart beat per minute. was characterized by an average number of 153.4±2.25 times and an average number of breathing movements up to 36.2±0.45 times.

On the 3rd and 4th day of treatment, standing, sucking, sucking and other reflexes were observed in the calves of the first and second experimental groups in a timely manner, the mucous membranes were light-purple in color, the moisture was moderate, the skin elasticity was maintained, and it lay flat on the shiny skin.

In the calves of the control group, severe weakness, loss of response to external influences, signs of dehydration of the body: sunken eyeballs, nasal glass, oral mucosa and dry skin, heart rate increased to an average of 163.6±3.28 times per minute, respiratory rate increased. it was observed to reach 45.4±0.23 times per minute.

By the last stages of dyspepsia, i.e. on the 6th day of treatment, in 2 control calves, loss of appetite, sucking and sucking reflexes, weakness, decreased glossiness of the skin, severe sunkenness of the eyeball and dryness of the nasal glass, unresponsiveness, loss of skin sensitivity, severe weight loss were observed. Due to the paralysis of the anal sphincter, involuntary defecation, soiling of the tail and around the anus with feces became characteristic. Cyanosis (blueness) of visible mucous membranes was observed. Breathing movements are difficult, shallow and very fast. The body temperature, as well as the temperature of

the feet and ears, decreased. Infected calves were noted to stagger, often lying down.

The number of erythrocytes in the blood of calves in the first experimental group was on average 7.56±0.08 million/μl at the beginning of the experiments, and by the 7th day of treatment it was 6.25±0.24 million/μl (the norm is 7.4-8.4 million /μl), leukocyte count - 7.94±0.12 and 7.60±0.13 thousand/μl, respectively (normal - 7.1-12.1 thousand/μl), hemoglobin - 96.8±0, 16 and 102.5±0.06 g/l (norm - 105-109 g/l), glucose - 3.23±0.06 and 4.32±0.05 mmol/l (norm - 4.47-4.98 mmol/l), hematocrit - 35.2±0.12 and 36.4±0.14% (normal - 35-37%) and alkaline reserve - 52.6±0.45 and 54.7± It was 0.42 volume%SO2 (norm - 54-56 volume%SO2) (R<0.05).

In the calves of the second experimental group, the number of erythrocytes in the blood at the beginning of the treatment was on average 7.42±0.06 million/μl, by the 7th day of treatment it was 6.23±0.14 million/μl, and the number of leukocytes was 7.6±0, respectively. ,2 and 7.8±0.13 thousand/μl, hemoglobin - 98.7±0.52 and 105.2±0.08 g/l, glucose - 3.15±0.04 and 4.56±0 ,06 mmol/l, hematocrit - 32.4±0.21 and 37.5±0.15%, and alkaline reserve - 48.2±0.52 and 55.7±0.22 volume%SO2 (R<0.05).

In the calves with dyspepsia in the control group, sharp differences in blood morphobiochemical parameters from physiological norms were observed, the average number of erythrocytes compared to physiological norms on the 3rd day of the disease treatment was 0.16, on the 5th day - 0.23, and on the 7th day - 1.05 million/μl. , hemoglobin content - 2.2 g/l, 2.5 g/l and - 5.4 g/l, respectively. , hematocrit increased by - 2.6%, 4.8% and - 6.4%. These indicators indicate blood coagulation and intoxication in calf dyspepsia from the 3rd day of the disease. According to the literature, the amount of urea in the blood can reach up to 200 mg% (the norm is 14-22 mg%) due to severe dehydration of the body in a severe form of dyspepsia [14].

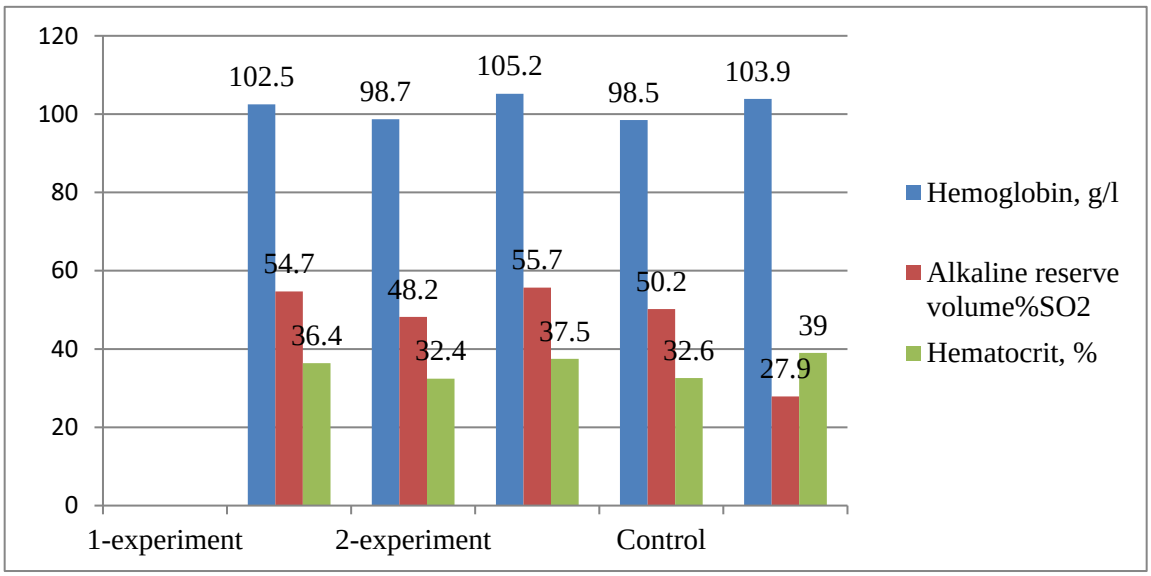

Figure 1. Morpho biochemical indicators of the blood of experimental calves

By the end of the experiments, the number of leukocytes in the blood of the control group decreased by an average of 1.6 thousand/μl, glucose by 0.68 mmol/l, and alkaline reserve by 22.3 volume%SO2. These indicators indicate the reduction of alkaline reserves in the blood and the development of acidosis in the calf's body due to excessive excretion of electrolytes with feces due to severe diarrhea during dyspepsia.

The amount of total bilirubin in the blood in the

first experimental group was on average - 4.1±0.05 and 4.3±0.06 μmol/l. in the second experimental group, on average - 4.2±0.05 and 4.4±0.06 μmol/l. formed 0.68±0.06 and 0.52±0.08 mmol.s/l of activity of AST and ALT enzymes in calves of the first experimental group. from 0.62±0.06 and 0.45±0.05 mmol.s/l. to, in the second experimental group, 0.58±0.06 and 0.42±0.06 mmol.s/l of AST and ALT enzyme activity by the end of the experiments, respectively. decrease (R<0.05) was observed.

In the calves of the control group, due to the worsening of the disease, the amount of bilirubin in the blood increased from 4.2±0.04 μmol/l to 8.5±0.06 μmol/l, the activity of AST and ALT enzymes increased from 0.65±0.06 and 0. 56±0.08 mmol.s/l. from 0.82±0.06 and 0.66±0.05 mmol.s/l. (Fig. 2) an increase (R<0.05) was observed.

The amount of alpha- and beta-globulins in the blood serum of calves in the experimental groups increased within the limits of the norms during the experiments, and in the calves with dyspepsia, dysproteinemia was observed due to the decrease of albumins and the increase of globulins (mainly alpha- and beta-globulins), the average of albumin in the calves of this group compared to the initial values - 3.2% decrease, - 4.5% increase of alpha-globulins and 3.6% increase of beta-globulins. These indicators include severe toxic dyspepsia in calves, increased activity of AST and ALT enzymes due to destructive changes in liver cells, accumulation of bile fluid components in the blood (cholestasis syndrome) and a decrease in the amount of glucose, total protein and albumin in the blood (hepatodepressive syndrome)) is known to occur with [14].

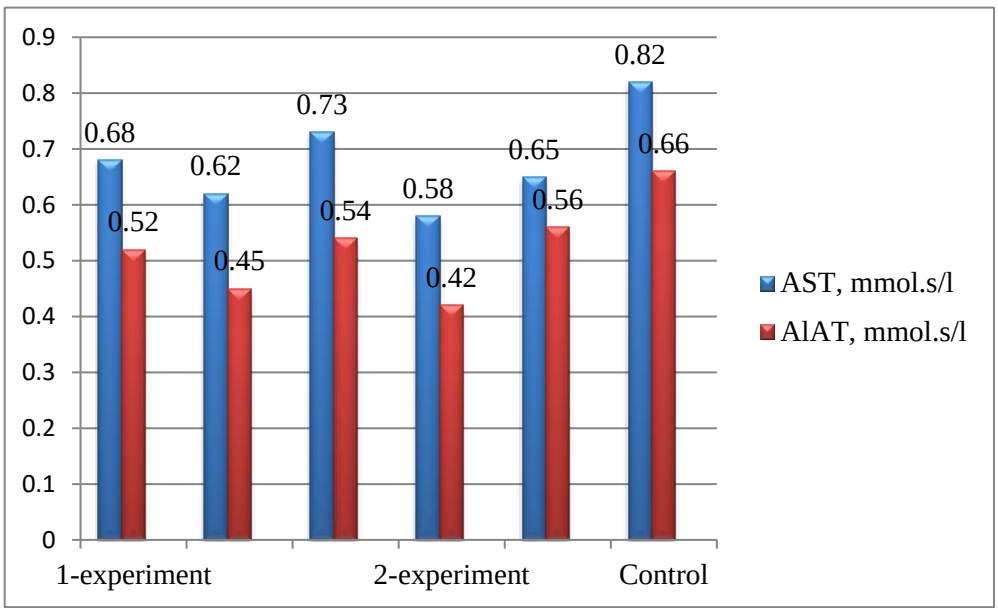

Figure 2. Aspartate aminotransferase and alanine aminotransferase enzyme activities in experimental calves

CONCLUSIONS

In the treatment of dyspepsia in calves, they should be starved for 8 hours and during this time drink 10 ml/kg (300) ml of Regidron solution every hour, after the fasting period, add 1/3 of cow's milk (333 ml) + an equal amount of warm physiological solution drink 3 times a day. Drink 40 ml of artificial gastric juice (1 g of pepsin, 1.5 NSl, 100 ml of distilled water) 15 minutes before giving colostrum, from the second day of treatment until the sign of diarrhea disappears Vetom 1.2. The most effective way is to drink 50 mg/kg of probiotics (4 times a day) every 6 hours and to

inject 0.2 ml/kg of citrate intramuscularly 3 times every 24 hours.

2. Treatment of dyspepsia in such a complex way corrects the imbalance of electrolytes in the body, reduces metabolic acidosis, intoxication, dehydration, normalizes intestinal biocenosis, improves digestion and cures dysbacteriosis.

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