PREVENTION OF CALCIUM-PHOSPHORUS METABOLISM DISORDERS IN RABBITS

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Annotation: *this article describes clinical signs, hematological indicators and changes in the prophylaxis of calcium-phosphorus metabolism in rabbits. Low-satiety, poor-quality feeding of Mother rabbits during the choking period is considered to be a complete failure of the mother rabbits body's needs for vitamins and macro-microelements. Methods have been developed to give granule mixture baits enriched with Nova Marx premix to prevent calcium and phosphorus exchange disorders in rabbits, such as palpitations of the skin coating, decreased glare, Intense Whitening of the mucous membranes, decreased body weight, decreased appetite, and mixing in water with an Innoprovet probiotic. This method of prevention prevents calcium-phosphorus metabolism disorders in rabbits.*

Keywords: *rabbits, calcium, phosphorus, Nova Marx, premix, Innoprovet, hypocalcemia, hypophosphaemia, hypoglycemia, hypogemoglobinemia.*

Relevance of the topic. Today, worldwide rates of substance exchange disorders among purebred rabbits, including disorders of calcium and phosphorus metabolism, and the resulting births to nymphs and low viability or dead rabbit children, are common. The program for the development of the livestock sector and its industries in the Republic of Uzbekistan for 2022-2026 provides for "further development of the rabbit network, raising the level of consumption of quality rabbit meat and increasing its share in the volume of total meat products, achieving an increase in the volume of rabbit meat production from 100 tons to 23 thousand tons, To effectively perform these urgent tasks, diseases of the metabolism disorders of rabbits, in particular disorders of the exchange of minerals, are one of the major obstacles. There are many cases of disorders of calcium and phosphorus metabolism in rabbits, which include a decrease in natural resistance and productivity in the body, the stay of young rabbits from growth and development, the throwing of a child or a nymph in deer rabbits, low-viability offspring. Therefore, the spread of calcium and phosphorus exchange disorders in rabbits, economic harm, determination of etiology, early diagnostics, the development and implementation of highly effective methods of Group prevention are current problems in the field.

Like minerals, vitamins are complex compounds necessary for the rabbit's body. Vitamins are necessary for the growth and development of rabbits. There is a lack of vitamins (hypovitaminosis) and their excess (hypervitaminosis). Both of these factors negatively affect the life of the animal and affect the cause of various diseases, as well as the reproductive nature of rabbits [1,3,4,6]

Vitamin E plays a direct role in the reproduction process of animals. Lack of vitamin E significantly affects the reproductive function of female rabbits, among which weakened (low vitality) or already dead rabbits are born (who die on the first day of life). Lack of vitamin E also negatively affects male rabbits, reducing sperm production and reducing its quality. Rabbit breeding decreases and dystrophy or muscle weakness is observed in the development of subsequent offspring. The source of vitamin E for rabbits can be juicy feed (green leaves), grits of grains, alfalfa, vegetable oils and yeast [2,5,7].

Materials and methods. Experiments on rabbits were carried out in a farm specializing in rabbits named “Kumushkent-Khumo bird”, which is located in the Oqdarya District of Samarkand region. 10 heads were separated from the deer rabbits in the rabbit farm and underwent a clinical examination.

With their generally accepted clinical examination methods, the general condition, appetite, obesity, response to external influences, the condition of the mucous membranes, the condition of the skin lining and skin, the condition of the bone-muscles, body temperature, the number of breaths and pulses in 1 minute were determined.

Hematological examinations in experimental rabbits were carried out in the laboratories of “OPTATECH” of the Department of “diseases of poultry, fish, bees and furry animals” and “hematology” of the Department of “diseases without internal transmission”. Blood glucose levels were converted using a contour plus branded glucometer, and total serum protein levels (RNC - refractometer) were refractometrically conducted.

Biochemical indicators of rabbit blood were examined in biochemical analyzers “Genru GS300 Plus and CYANSmart”.

Analysis of the results obtained. The main causes of calcium and phosphorus metabolism disorders in rabbits are mainly due to the conditions of their storage and maintenance, the composition and satiety of rations, they also depend on the degree to which their body is supplied with biologically active substances.

Dispensary examinations examined and analyzed the levels of rabbit metabolism and the composition and satiety of rabbit rations, and found that they lacked hemoglobin, glucose, total protein, carotene, inorganic phosphorus, and total calcium levels.

In order to select means to prevent the violation of calcium and phosphorus metabolism in the rabbit's body, to study their effect on the rabbit's body, two groups of 10 heads each of 20 heads of 6-month-old fertilized Strait rabbits belonging to the xikol breed of the “Kumushkent-Khumo bird” rabbit farm in the Oqdarya District of Samarkand region were isolated and experimented.

For experiments, the first experimental group was formed in the Farm 2 groups, each of which had 10 heads of oxalic rabbits of the xicol breed, and the rabbits in the experimental group were given granular feed (1 kg of Nova Marx premix-enriched per 1tonna feed) + the probiotic Innoprovet with 1 ml of 1 l of water (for 7 days). Rabbits in the second control group were fed only in the farm diet, experiments continued for 30 days.

Clinical and hematological examinations were carried out in experimental rabbits. Through the clinical examination of Mother rabbits, the generally accepted clinical examination methods revealed the general condition, appetite, obesity rate, response to external influences, mucous membranes, skin coating, skin and movement organ condition, body temperature, pulse and breath count in 1 minute.

Clinical status has been established in reindeer rabbits through generalized clinical examination methods.

The weight of newborn rabbit children was checked at birth, 10 days old, 20 days old and 30 days old.

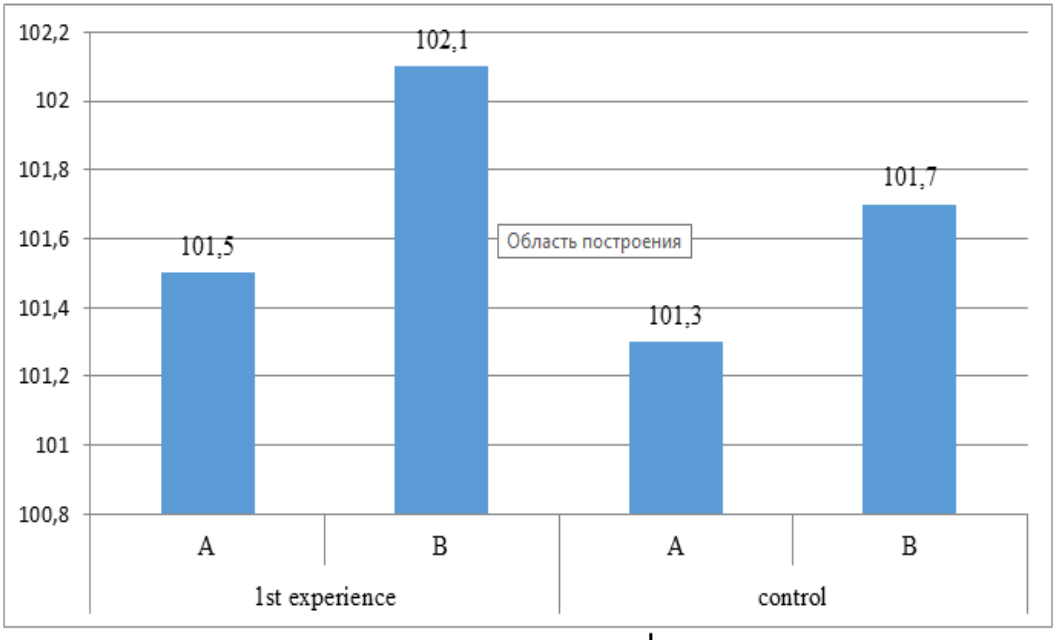
The experiments were continued for thirty days. The results of a clinical examination in rabbits in the experiment were noted that at the beginning of the experiments, the body temperature of rabbits was at the level of norms in all groups. In addition to Bundab, symptoms such as decreased appetite, symptoms of anemia, numbness, decreased response to external influences, wheezing of wool, lack of Shine were observed. While experimentally these symptoms have been noted to decrease in all rabbits in experimental groups, clinical signs observed at the beginning of the experiment in the control group have also been re-manifested at the end of the experiment. This condition indicates that rabbits are experiencing increased violations of the exchange of substances in them with the end of the choking period.

The body temperature of the rabbits in the experiment was an average of 38.3±0.01 ◦C at the beginning of the experiments in experiment Group 1, going to the end of the experiment at 38.1±0.02 ◦C.

A study of clinical indicators of rabbits in the experiment showed that in Experiment 1, the body temperature averaged 38.3±0.01 ◦C at the beginning of the experiment, while going in the middle of the experiment was 39.1±0.02 ◦C, and going to the end of the experiment was 38.1±0.02 ◦C. Clinical indicators in control group rabbits were accordingly 39.0±0.02 ◦C, 38.3±0.02 ◦C and 38.2±0.04 ± c ($P<0.05$). In comparison to the control group, Experiment 1 found that the indicators were better manifested in the rabbits of the group.

The pulse count in 1 minute was 129±4.4 times the average at the beginning of the experiment (120-200 times in the norm) in Group 1,127±4.1 times between the experiment and 123±1.1 times at the end. The corresponding control group was 114±4.8, 118±4.7 and 123±3.8 times ($P<0.01$). Experiment 1 found that the pulse number in the group was better manifested compared to control groups. The clinical signs recorded at the beginning of the experiments were barely observed in experiment Group 1 at the conclusion of the experiment, while the control group observed the repetition of the initial detected signs.

The number of breaths in 1 minute (the norm is 50-60 times in 1 minute) averaged 54±0.3 times at the beginning of the experiment in rabbits in Group 1, 52±0.1 times between, and 50±0.2 times at the end. The control group averaged 51±0.04, 50±0.05 and 51±0.01 times ($P<0.05$).



1. - image. Dynamics of change in the amount of hemoglobin in the blood of steam rabbits (g/l).

The hemoglobin content in rabbit blood was found at the beginning of experiments to have averaged 101.5±3.1 g/l in experimental group 1, increasing to 102.1±3.2 g/L at the end of the experiment. This was characterized by a change in the Nazarene group of the causative agent from 101.3±3.0 g/l to 101.7±2.1 g/L.

The total serum protein content averaged 52.71±1.85 g/L in 1 experimental group rabbits at the beginning of experiments and 63.1±1.4 g/l by the end of experiments, while the control group found that this rate decreased to an average of 54.24±1.95 g/l and 53.85±1.65 g/l ($P<0.05$) by the end of experiments.

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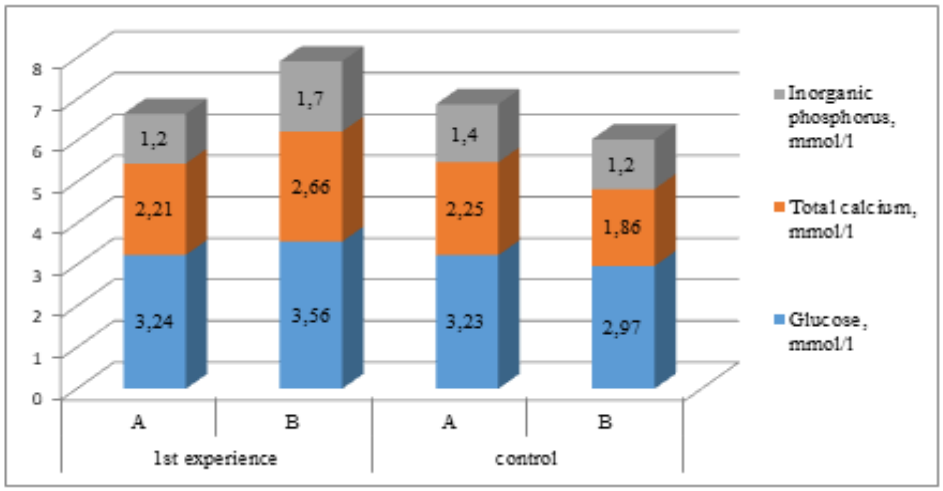
The glucose content in the blood of steam rabbits in the experiment demonstrated in the first experimental group the dynamics of increasing on average 3.24±0.59 mmol/l at the beginning of the experiments, to an average of 3.56±0.621 mmol/l at the end of the experiments.



Biochemical indicators of rabbit blood in the experiment

A decrease in glucose from 3.23±0.573 mmol/l to 2.97±0.501 ($P<0.05$) was observed in control group rabbits, with a decrease in total calcium from 2.21±0.209 mmol/L at the beginning of Group 1 investigations, while an increase of 2.66±0.259 mmol/l at the end of examination was observed to a decrease in control group from 2.25±0.147 mmol/l to 1.86±0.045 mmol/l, inorganic phosphorus levels were observed to increase from 1.2±0.069 mmol/l to 1.7±0.066 mmol/l at the beginning of the experiment, with an average decrease in inorganic phosphorus levels in the control group from 1.4±0.027 mmol/l to 1.2±0.037 mmol/l ($p<0.01$).

The body weight of their children born to rabbits of the xicol breed in the experiment was an average of 75.2±13.7 grams for rabbits of the experimental group 1, and an average of 58.6±12.7 grams for the control group. Rabbit children born to rabbits in Experimental Group 1 were noted to have an advantage over their birth weight control group. At 10 days (130-260 gr by Norm), respectively, the average in groups was 198.4±12.5 and 187.6±14.6 grams, and here, too, the predominance of the body weight of rabbit children of the 1st group was observed. At 20 days (norm 250-500 gr) averaged 285.6±22.3 and 261.2±25.3 grams respectively, and at 30 days (norm 400-900 gr) averaged 456.5±55.4 and 402.9±46.7 grams.

In preventing calcium and phosphorus exchange disorders in rabbits, the effect of using granule feed and innoprovet probiotic from the 10th day of vaporization to the 10th day after delivery is high, improving substance metabolism in rabbits, ensuring that clinical and hematological indicators are at norm level by 28.4% higher than the birth body weight control group of children born from them.

It was found in studies that rabbit children born to Mother rabbits in the first experimental group, whose composition was given for 7 days by mixing 1 kg of Nova Marx premix-enriched granule omixta feed and Innoprovet probiotics in 1 ml of 1 liter of water, with a body weight higher than those in the other group.

The study of maternal rabbit body weight in the experiment did not notice a change at the beginning of the experiment, but at the conclusion of the experiments, an average of 5.44±0.75 kg in the control group was 4.64±0.41 kg on average.

CONCLUSIONS

1. In the prophylaxis of mineral exchange disorders in rabbits, the effect of using granular feed and innoprovet probiotic together from 10 days of vaporization is high, improving the metabolism in rabbits, ensuring that clinical and hematological indicators are at the level of norms by 28.4% higher than the control group of the body weight of children born from them.

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