

METABOLIC DISORDERS ARE ONE OF THE ETIOLOGY FACTORS OF POSTPARTUM PATHOLOGY IN COWS

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Relevance of the topic. In conditions of intensive livestock farming, metabolic disorders are the main etiological factor in the occurrence of postpartum and obstetric-gynecological pathology [1]. In this regard, there is a need for scientifically based studies of the physiological mechanisms of regulation of the reproductive capacity of animals. As practice shows [2], violation of the requirements for feeding and keeping pregnant cows and heifers leads to underproduction of 15–20% of calves [3]. In addition, the consequences of inappropriate living conditions for pregnant females can lead to the occurrence of metabolic diseases after calving (acetonemia, ketosis, osteodystrophy, postpartum paresis, eclampsia and postpartum cow confinement). Therefore, one of the most important stages of obstetric-gynecological dispensary examination of cows is a biochemical study of their blood in order to identify metabolic disorders.

The purpose of the research is to identify the degree of metabolic disorders in the body of cows of different physiological groups and to establish their influence on the occurrence of postpartum diseases.

Materials and methods. The work was carried out on the basis of the State Enterprise "Experimental Base "Dachna" of the State Institute of Health and Social Sciences of the National Academy of Sciences of Ukraine, Biliaivskyi district, Odessa region; laboratory of the Department of Surgery, Obstetrics and Diseases of Small Animals. The material for the study was blood serum from cows of different physiological groups (dry period, 1-5 days after calving, 10-th day of the postpartum period, mid-lactation) and data from a clinical and gynecological study of cows of the Ukrainian red dairy breed and their hybrids with Holsteins.

The metabolic profile was monitored by biochemical blood tests. The protein metabolism was assessed by the content of total protein in the blood serum, the protein profile (albumins, globulins) by spectrophotometry. In addition, the activity of the enzymes alanine aminotransferase (ALT; KF 2.6.1.2) and aspartate aminotransferase (AST; KF 2.6.1.1) was determined in the blood serum by the Reitman and Frenkel method, glucose by the monooxygenase method, calcium and phosphorus by generally accepted methods, and acid capacity by the Nevodov method.

Research results. The metabolic profile was monitored by biochemical blood serum tests. Four groups were formed from the most typical animals.

Each group included clinically healthy cows with average milk productivity.

During the experiment, 250 cows of the State Enterprise “Dachna” were subjected to clinical and gynecological and ultrasound examinations. Pathology of the reproductive organs was detected in 96 cows (24.0%). At the same time, uterine hypotension was registered in 4 cows (3.8%), uterine subinvolution - in 6 (5.8%), acute postpartum purulent-catarrhal endometritis - in 16 (15.4%), chronic and subclinical endometritis - in 6 (5.8%) and 4 (3.8%) heads, respectively, follicular and luteal cysts - in 2.9% and 3.8% of animals. Postpartum endometritis and mastitis were also simultaneously registered in 8 cows (7.7%).

According to the results of our studies, in highly productive cows in which postpartum retention was registered, purulent-catarrhal endometritis was noted in 74.2% of cases. During normal births, endometritis was found in 4 cows. Biochemical examination of blood samples from cows of different physiological groups and heifers revealed reduced levels of glucose and vitamin A.

Thus, in cows before the start, the level of total protein was found to be approaching the lower limit of the norm, and the level of glucose, total Ca, P and vitamins A, E decreased by 28.6%; 19.4%; 31.0%; 38.0% and 41.0%, respectively ($P < 0.05$).

Of the minerals, Ca and P are of greatest importance for normal reproduction of the offspring.

In case of phosphorus deficiency, uterine and ovarian dysfunction was noted (persistence of follicles, which was accompanied by metrorrhagia, cystic degeneration of follicles, uterine hypotension). When the P/Ca ratio is damaged, the level of nonspecific resistance to harmful substances decreases, acidosis develops.

For the first time in the first decade after the holiday, the recorded level of total protein decreased by 9.9%. The glucose content of heifers decreased due to the physiological level, the activity of hepatospecific enzymes AsAT and AlATzen decreased by 16.7%. In animals of this group, the lowest value of acid capacity was recorded, which is a sign of acidosis. In the serum of blood cows that were on the inner side, a decrease in glucose and vitamin A levels was found, respectively, by 27.2% and 35.2% ($P < 0.05$).

From 10 cows with postpartum purulent-catarrhal endometrium, uterine washings were taken for indication and identification of microflora, as well as determination of its pathogenicity.

During bacteriological examination, the following microorganisms were isolated: white and golden staphylococcus (13.8%) (Staph. aureus, Staph. albus), Escherichia coli (16.4%) E. coli communis; Proteus group bacteria (14.3%) (P. morganii, P. vulgaris, P. mirabilis; Pseudomonas aeruginosa (8.3%), (Bact. pyocyaneum); Candida fungi (17.4%); enterococci (25.3%) (Str. faecalis, Str. durans).

Conclusions. Obstetric and gynecological pathology was detected in 98 cows (24,2 %) of the number examined in the State Enterprise “EB “Dachna” of the Bilyaiv district of the Odessa region, including uterine pathology in 32 cows (34.6%).

During the bacteriological study of the uterine microflora in cows with postpartum purulent-catarrhal endometritis, cocci (39.1%); Staph. aureus, Staph.

Albus; Str. faecalis and rods (60.9%) were isolated; E. coli communs; P. morganii, P. vulgaris, P. mirabilis; Bact. pyocyaneum.

A direct proportional relationship has been established between metabolic disorders, namely vitamin A deficiency and acid-base imbalance (acidosis) and the occurrence of obstetric and gynecological diseases.

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ПОШИРЕНІСТЬ ТА ПРИЧИНИ АКУШЕРСЬКОЇ І ГІНЕКОЛОГІЧНОЇ ПАТОЛОГІЇ У КОРІВ

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Актуальність. Акушерські та гінекологічні захворювання корів залишаються однією з найактуальніших проблем у сучасному молочному скотарстві. Поширеність цієї патології значно впливає на репродуктивну функцію тварин, знижує молочну продуктивність і спричиняє відчутні економічні збитки господарствам.

Мета досліджень: вивчити поширеність та встановити основні причини виникнення акушерської та гінекологічної патології у корів в умовах ТОВ АФ «Кодима» Подільського району Одеської області.

Матеріали і методи. Дослідження проводились на базі ТОВ АФ «Кодима» Подільського району Одеської області протягом 2024–2025 рр. Матеріалом слугували дані ветеринарної звітності та результати клінічного обстеження корів. Аналізували акти акушерської диспансеризації, дані про отелення та випадки патології.

Результати. У результаті досліджень встановлено, що симптоматична неплідність становить 22% від загального поголів'я. Найчастіше реєструвалися субінволюція матки (69,71–73,70%) та післяродовий ендометрит (45,45–68,42%). Виявлено виражену сезонність патології: у зимово-весняний період захворюваність вища, що пов'язано з умовами стійлового утримання та