

Materials of Conferences

**AGENCY OF PHENIBUTUM
ON PARAMETRES OF
AN ENGLOBEMENT OF RATS
OF LINE WISTAR ON MODELS
OF THE EXPERIMENTAL
DEPRESSION**

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The variety of the clinical displays of depressive disturbances, the multiplicity of the different groups of antidepressants molecular impact mechanisms testify the participation of the linked disturbances of neurochemical systems in a depression pathogenesis. The study of the neuroimmune mechanisms of the depression development and the search for the correction means is one of the main directions of the psychoneuroimmunopathology development. We carried out an experimental research of the phenibute and phagocytal immune link impact on the experimental depression models. A pathological condition of the Wistar line male rats was formed under the conditions of emotional stress. As a result aggressors and victims with a daily experience of wins and losses were outlined within 20 intermale confrontations. Intact males that were placed separately in the same cells for 5 days and received intra-abdominal injections of physiological solution were used as a control №1. The rats with an experimental depression model that received intra-abdominal injections of physiological solution were involved in the control group №2. The research group was presented by the depressed animals that received intra-abdominal injection of phenibute in a dose of 25 ml/kg within 10 days. The study of the phagocytal neutrophil activity was carried out on the latex test basis with the definition of phagocytal number, phagocytal index, and the number of active phagocytes. The phagocytosis percent as well as the phagocytal number rose within the depressed animals (both aggressors and victims) in comparison with the control №1. However, the absolute number of the phagocytating neutrophils within the aggressors decreased while the increase in this index was registered within the victims. The phenibute had a

corrective impact on a non-specific immunity link within the research group animals: the phagocytal number and index decreased both within the aggressors and victims and approached the “normal” animals (control №1) phagocytal parameters, and the number of active phagocytes tended to increase within the aggressors and decrease within the victims. The results allow us to conclude that phenibute is able to remove the disturbances of non-specific resistance that appear under the depressive conditions.

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**ACID-BASIC CONDITION OF BLOOD
AS THE INDICATOR
OF EFFECTIVENESS OF USE
AT THE RATION OF BIRD
THE NATURAL POLYMINERAL
ADDITION**

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The abnormalities of acid-basic condition (ABC) of the agricultural bird while the anthropogenic loads, high productiveness, discrepancy to the standards of conditions of keeping and feeding become the reason of abnormality of physiological functions.

The aim of research – to assess the effectiveness of use of polymineral addition (PMA) Ecos from the natural hydro aluminum silicate of the deposits of Belgorod region at the feeding of bird [1], using as the integral showing its physiological prosperity and adaptation to the conditions of feeding the acid-basic condition of blood (ABC).

Methodic

The researches at ducklings of meat directions of cross Medeo were carried out in conditions of vivarium of Belgorod state university; scientifically-producing experience at the ducklings-boil-

ers of cross ISA was carried out at the bird complex «Yasnozorski» of Belgorod region. By the principles of par-analogues with the taking into consideration of mass of the body and clinical condition there were formed experimental and control groups. The bird of control group received only basic ration (BR), experimental – in addition to BR – PMD at the optimal doze: 100 mg·kg⁻¹ of mass of the body for ducklings and chicken (optimal doze of PMD was defined in the special research). The duration of growth of chicken was 49 ducklings – 60 twenty-four-hours. There were taken into consideration the general clinical condition, density of feathering, dynamics of mass of the body, and also average daily increase, eaten feed and safety of bird. There were defined: the active reaction of blood (pH_{act}) by ionomer (Mettler-Toledo, Switzerland, 2000); bicarbonates of plasma (IB) by diffusive method; buffer bases of plasma (BB), standard bicarbonates (SB), displacement of buffer bases (DBB), partial pressure of carbonic acid (pCO₂) in the blood by the method of Astrup in modification O. Ziggard-Andersen by nomograms; erythrocytes were calculated at the camera of Goryaev; hemoglobin was defined by hemigloinecyanide method.

Results

While the comparison of showings of ABC of 30- and 60-days old ducklings of control groups 30-days old ducklings had metabolic acidosis, which was supported by low means of значения pH_{act}, deficit of BB and SB in blood correspondingly to 17,0 and 17,1% ($p < 0,05$), which were defined by high energy of growth of bird while the insufficient formed mechanisms of homeostatic regulation. The displacement of parameters of ABC at the experimental group was less revealed: SB was $20,2 \pm 1,6$ milimole·l⁻¹ against $18,6 \pm 1,3$ milimole·l⁻¹ in control, and DBB was higher to 11,5% ($p < 0,05$). The more high means of pCO₂ promoted the keeping of pH_{act} in the limits of physiological norm ($7,42 \pm 0,02$) and initiated the respiratory regulative mechanisms. 60-days old ducklings (of control and experimental groups) there was observed the balance of ABC, and all the parameters that characterize it were at the limits of physiological norm.

Ducklings, who received with fed the PMD, had the observed acidosis of metabolic nature at the subcompensated phase. The high productiveness of bird was predetermined by intensive metabolism, high oxygen request and considerable displacement ABC of blood. At the experimental groups of birds the changes of its pa-

rameters, which reflect the acid-basic homeostasis, were minimal, what is confirmed by the level of BB of blood – of the experimental bird it to the 6,6% higher than it is of control one ($p < 0,05$). The acidosis condition of blood of experimental chicken is compensated by rather strong, than it is of control, buffer systems: the concentration of SB is higher to 17,5% ($p < 0,05$).

According to existing opinion, one of the mechanisms of compensation and adaptation at the system of acid-basic homeostasis – the increase of transport of oxygen to the tissues and full oxidation of accumulated metabolites [2]. PMD Ecos, having hematopoietic effect, carries out this process at the full measure: regulation and quantitative strategies of adaptation promote the increase of erythrocytes in the blood, and also general hemoglobin and at the separate erythrocyte and oxygen capacity of blood of ducklings and chicken correspondingly to 12,0 and 52,6%; 7,1 and 18,7%; 13,4 and 19,3%; 7,2 and 18,5% ($p < 0,05$) [3].

Thereby, the inclusion of polimineral addition to the ration of feeding of birds promotes the forming of strong buffer systems, the most full compensation of displacement at the acid-basic condition of blood, and positively influence the physiological condition, initiates the growth and development, rises productiveness and dietary value of meat [4].

References

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