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## STUDY OF LYSOZYME ACTIVITY IN THE BLOOD SERUM OF RATS WITH SIMULATION OF TEETHING DISORDERS

### ВИВЧЕННЯ АКТИВНОСТІ ЛІЗОЦИМУ В СИРОВАТЦІ КРОВІ ЩУРІВ ПРИ МОДЕЛЮВАННІ ПОРУШЕННЯ ТЕРМІНІВ ПРОРІЗУВАННЯ ЗУБІВ

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Oral fluid includes many components responsible for local immunity. A leading role in supporting non-specific immunoresistance belongs to lysozyme [1]. Lysozyme is present in humans in almost all secretions and provides protection against bacteria, viruses and fungi [2]. The protective function of the enzyme is related to the ability to selective damage of the cell walls of bacteria by hydrolysis of B-1,4 glycosidic linkage between N-acetylmuramic acid and N-acetylglucosamine cell wall of most gram-positive bacteria [3]. At the same time lysozyme can cause osmotic death of a bacterial cell as well as increase the permeability of bacterial membranes for other antimicrobials molecules, in particular for antibacterial pharmacological preparations [4].

**Objective.** Study of lysozyme activity in the blood serum of rats when modeling delayed and early teething.

**Methods.** The experiment was performed on 20 white laboratory female rats and 37 infant rats. Starting from the first day of the drug administration, males were placed together with females. Depending on the drugs used, animals were divided into 4 groups: 1) intact (vivarium diet); 2) receiving L-thyroxine in a dose of 10 mg/kg + vivarium diet; 3) given antibiotics (cefo-perazone 180 mg/kg – pregnancy, amoxiclav 135 mg/kg – lactation) + vivarium diet; 4) Mercazolil – (20 mg/kg – pregnancy), (50 mg/kg – lactation) + vivarium diet.

Further studies were carried out on infant rats, which were born to female rats who received these drugs. Infant rats were removed from the experiment under thiopental anesthesia (20 mg/kg) after the lactation period at about the

age of 35 days. The total duration of the experiment was 56 days. Rats of all groups were made a biochemical analysis of blood serum.

In the statistical processing of the results obtained a computer program STATISTICA 6.1. was used to assess their validity and measurement errors.

**Results.** Modeling of early teething in rats of the 2nd group led to a significant decrease in lysozyme activity by 40% compared with the intact group ( $P < 0.001$ ). Animals in the 3rd group with delayed teething obtained from the female rats receiving antibiotics during pregnancy and lactation, showed lysozyme activity decreased significantly by 68.5% ( $P < 0.001$ ). In the 4th group of animals with delayed teething obtained from the female rats that received Mercazolil during pregnancy and lactation, the level of lysozyme decreased by 65.7% compared to the intact group of rats ( $P < 0.001$ ).

**Conclusions.** As a result of the conducted study, depression of the lysozyme-synthesizing function was established in the organism of animals that were modelled delayed and early teething.

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