THE CONDITION OF C-FOS GENE IN THE NEUROSECRETORY NUCLEI OF THE HYPOTHALAMUS IN RATS STRESSED BY LIGHT AND THE EFFECTS OF MELATONIN AND EPITHALON

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Key words: melatonin, epthalon, gene – protein c-Fos, epiphysial hypofunction

The aim was to study the effect of melatonin and a synthetic bioregulator – epthalon for the purpose of correction stress-induced changes of the activity of the gene of "ultraearly response" c-fos in the lateral large cell subnuclei of the paraventricular nucleus (lIPVN) of the rat hypothalamus at different intervals of 24-hour period (in the daytime and at night). The expression of the product of this gene – protein c-Fos – in animals kept under normal conditions of alternating illumination and darkness demonstrated a clear-cut circadian pattern (with a higher level by day). The diurnal index of the c-Fos content in the animal's lIPVN is lower by 33,0%, under conditions of light stress, whereas the nocturnal one approximated to the control values. An injection of melatonin (0,5 mg/kg) to light-stressed animals reflected at 02.00 p.m. hundred by exceeding the index of the c-Fos protein in the animal's lIPVN almost twofold compared to the experimental findings on stressed animals without hormone introduction, as well as by a normalization of the circadian dynamics of the expression of the gene under study. An augmentation of the index of the c-Fos protein concentration was disclosed in the structure upon using tetrapeptide epithalon (0,5 μg/kg) at night in relation to individuals with epiphysial hypofunction without undergoing experimental therapy with epithalon. No such effect was fixed at night.

HELICOBACTER PYLORI SEROPOSITIVITY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Key words: chronic obstructive pulmonary disease, ulcer, stool-test, urease test

Introduction. In recent years serious attention has been paid to the study of extrapulmonary manifestations in patients with chronic obstructive pulmonary disease (COPD), of which combined defects of the gastrointestinal tract are of great concern.

The aim of the investigation was put to the role of COPD in the development of the erosive and ulceral defects of the gastroduodenal area.

Materials and methods. 79 patients were examined. Among them 25 patients without COPD belong to the control group. 26 patients without COPD but with high level IgG Hp consist the second group. And the third group include 28 patients with COPD and erosive and ulcerous defects of gastroduodenal area.

Patients' age fell into the range between 30 and 72.

Patients were diagnosed using PC-based spirometry, fibrogastroduodenoscopy, intragastric pH, Stool-test and rapid urease test of biopsy.

Results . In patients of the 1-st and the 2-nd group we observed the normal range of the spirometry indicators, but the same indicators were reduced in patients of the 3-rd group .

The level of IgG H.pylori in the control group was 0,54±0,05 U/ml, and an esophagogastroduodenoscopy shows only the hyperemia and bulbit.

The level of IgG H.pylori in patients of the 2-nd group was 4,5±0,51 U/ml, at the same time the esophagogastroduodenoscopy also shows the hyperemia and bulbit.

But in the 3-rd group the level of IgG Hp was 4,46±0,43 U/ml, at the same time the esophagogastroduodenoscopy shows the erosive and ulceral defects of the gastroduodenal area in 57,1 cases.

Conclusions. The results of experiment show that chronic obstructive pulmonary disease plays the main role in the development of erosive and ulcerous defects and peptic ulceration.

LECTIN RECEPTORS IN STRUCTURAL COMPONENTS OF PARATHYROID GLANDS DURING THE HYPERPLASIA AND NEOPLASTIC CHANGES

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Key words: lectins, glycoconjugates, parathyroid gland, hyperplasia, tumor processes.

Different origin stress factors lead to the adaptation, compensation or development of the disease depending on their activity. Plasma membrane glycoconjugates play an important role in the reflection of intracellular transformation processes and intercellular cooperation on the development of benign and malignant changes. Its specificity and level of expression reflects the peculiarities of division and maintenance of lectin receptors, which bind with different carbohydrate determinants. The aim of the work was the study of lectin receptors' cytotopography in structural components of parathyroid glands (PTG) on the development of tumor processes. Research was conducted on the bioptatic material of humans aged from 25 to 76 years with hyperplasia (7), adenomas (3) and cancer (1) of PTG, which has been taken during operative treatment on a thyroid gland (TG) or PTG, and on autopsy material of PTG (20) in a norm, which has been taken during the current pathomorphological section according to the basic principles and standards of bioethics in medical research and publishing. The paraplast histological sections with the thickness of 6-7 μm was stained by hematoxylin-eosin for general morphological characteristics. For the detection of glycoconjugates in order to conduct lectinohistochemical reactions the set of lectins was used: Wheat germ lectin (WGA), Peanut lectin (PNA), Ricinus communis agglutinin (RCA), Concanavalin A (Con A), Laburnum anagyroides lectin (LABA), Sambucus nigra lectin (SNA). The WGA, LABA, RCA lectins showed the homogeneous binding with PTG parenchyma in norm and at the pathology. The expression of PNA and Con A lectin receptors increase in the perinuclear zone and on the surface of plasmalemma of parenchymal cells during the development of PTG hyperplasia. The similar expression was manifested with PNA lectin in the parenchymal cells in separate parathyroid lobules that may be evidence of the tumor progression of adenomas. The detected peculiarity – was the formation of large masses of colloid in parenchyma with intense accumulation of WGA lectin receptors (NAcDGlc-specific) and reduction SNA-related sialospecific receptors in structural components of parenchymal cells. Process of malignization is accompanied by the redistribution of PNA lectin receptors from the surface of plasmalemma inside the cells which concentrated in a perinuclear area and subsequent tumor progression correlates with reduction of receptors of this lectin in tumor cells. High expression of lectin PNA is observed in the vascular wall, while it can't be observed in a norm. In the process of malignization the carbohydrate type of tunica intima of blood vessels changes with accumulation of βDGal-specific receptors. It predetermines the loss of intercellular contacts of tumors cells, their invasion in a vascular bed with subsequent possibility of spreading in other organs and tissues.