

THE DYNAMICS OF THE CHANGE OF LEUKOTRIENES SYNTHESIS AND LIPOPEROXIDATION ACTIVITY DURING THE EARLY PERIOD OF THE TREATMENT OF THE PATIENTS WITH DUODENAL PEPTIC ULCER IN COMBINATION WITH ESSENTIAL HYPERTENSION

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Introduction. It is known that leukotrienes (LT) are considered not only as mediators of formation of the gastric and duodenal lesions but also as mediators of the constant inflammation in the periulcerous zone [1, 3, 4, 7, 8]. Local and systemic modulating effects of LT, their influence upon the initiation of production of the platelet activating factors and neutrophils binding factors [6, 10], the formation of superoxide anions, the release of lysosomal enzymes [2, 5, 9] and their direct participation in the inflammatory process let us suggest that the level and the character of dynamics of LT change are some of the possible indicators of the inflammatory process' treatment efficiency and prognosis of the course of the disease. We did not exclude the possibility of the comorbid pathology influences upon the quantitative and qualitative changes of biologically active substances and metabolic indices. It was the ground for carrying out the present study. The aim of the research was to study the dynamics of lipoxygenase metabolites of the arachidonic acid content and lipoperoxidation activity before treatment and during the early period after carrying out the basic therapeutic course in the patients with duodenal peptic ulcer and comorbid essential hypertension.

Materials and methods. The group of the examined individuals included 54 patients with duodenal peptic ulcer aged 38-49 years, among whom 33 patients had the comorbid essential hypertension. The determination of LTB₄ and LTC₄ content in the blood serum was carried out by the radioimmune method (an assay kit «LTB₄», «LTC₄/B₄/D₄», Amersham, Great Britain), the level of malondialdehyde (MDA) in the blood serum was studied by means of spectrophotometry. The reference indices were obtained in 21 practically healthy individuals (the control group). They and the examined patients were of the same sex and age. Mathematical processing of the results was carried out by means of variation statistics methods using the application programs package Statistika 6.0.

Results. A significant increase of LTB₄ and LTC₄ in the blood serum of the patients with duodenal peptic ulcer and comorbid essential hypertension in comparison with the control group was revealed during the initial study. These indices were, accordingly, 217.1±22.9 pg/ml (the control group - 53.2±11.4

pg/ml, $p < 0.001$) and 211.1 ± 24.7 pg/ml (the control group - 39.7 ± 10.8 pg/ml, $p < 0.001$). Besides, these indices of the patients with the comorbid pathology weren't different significantly in comparison with the ones of the patients with the isolated duodenal peptic ulcer (215.2 ± 24.7 pg/ml and 191.5 ± 27.5 pg/ml, accordingly). MDA content in the blood serum of the patients of both examined groups was equal and 2.3 times as high as among the reference norm (the control group - 4.88 ± 0.18 mcmol/l, $p < 0.001$). The repeated (after the main treatment course) study of the LT content in the blood serum of the examined patients with duodenal peptic ulcer showed a decrease of LTB₄ (to 89.5 ± 19.4 pg/ml) and LTC₄ (to 66.1 ± 20.8 pg/ml) content, in 2.4 ($p < 0.01$) and 2.9 ($p < 0.05$) times, accordingly. At the same time it was established that dynamics of decrease of the LTB₄ (to 121.9 ± 19.8 pg/l) and the LTC₄ (to 109.1 ± 18.6 pg/l) content in the patients with the comorbid pathology was significant (accordingly, in 1.98 and 1.93 times, $p < 0.01$) but less than that one among the patients with the isolated pathology. It is to mention that significance of differences of LTB₄ and LTC₄ in the patients with duodenal peptic ulcer after the treatment in comparison with the control group wasn't revealed but these indices among patients with the comorbid pathology were higher and significance of differences in comparison with reference norm was established (accordingly, $p < 0.01$ и $p < 0.05$). It is necessary also to mention that dynamics of the decrease of MDA content after treatment in examined patients was significant ($p < 0.001$). But it was less significant in the patients with the comorbid pathology (in 1.23 times, 9.28 ± 0.42 mcmol/l) in comparison with the patients with the isolated duodenal peptic ulcer (in 1.45 times, 7.06 ± 0.39 mcmol/l). Thus, the foregoing assumes the following conclusions.

Conclusion. A significant increase of leukotrienes synthesis and activation of lipoperoxidation processes occur in the patients with duodenal peptic ulcer and comorbid essential hypertension. The dynamics of decrease of the leukotrienes content during the early period of the treatment in the patients with the comorbid pathology is less significant than among the patients with the isolated duodenal peptic ulcer; besides, the high activity of lipid peroxidation processes can be considered as a factor of the course of disease's worsening.

Prospects for further research. The dynamics of the change of the leukotrienes content and the lipid peroxidation activity during the early period of the treatment of the patients with duodenal peptic ulcer in combination with essential hypertension suggests clarification of pathogenetic mechanisms of their synthesis' activation and determines the search of the possible ways of the revealed disorders' correction.

Key words: peptic ulcer, comorbidity, leukotrienes, lipoperoxidation

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