FEATURES OF NITRERGIC VASOREGULATION IN PATIENTS WITH ASTHMA AND OBESITY

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Nowadays asthma takes leader place among chronic noninfectious disease of internal organs. There is 5–10% of the world's population suffering from asthma; its frequent combination with overweight or obesity brings negative points in its course. Progression of asthma leads to the pulmonary arterial remodeling with development of endothelial dysfunction. One of the genes of the vascular endothelial function is the gene of endothelial NO-synthase (eNOS).

THE AIM of study was to establish the content of nitric oxide and determine gene polymorphism of endothelial NO-synthase in patients with asthma and obesity.

MATERIALS AND METHODS

The study involved 62 patients with asthma, among which 39 were obese. Among examined patients 64,3% were women; the average age of the patients was 42,4±5,4 years. DNA was isolated from leukocytes using a reagent «DNA express blood». In our work we used a diagnostic test system «SNP-Express» T-786C promoter gene of eNOS (NPF Liteh, Russia). Analysis of polymorphic DNA-loci was made by using polymerase chain reaction DNA synthesis with followed electrophoretic detection.

RESULTS

In patients with asthma and obesity defined decrease the synthesis of nitric oxide (1,9±0,2 mmol/l at norm 3,3±0,8 mmol/l), the contents of which was dependent on the severity of asthma; in severe disease persistence content nitric oxide was equal 1,4±0,3 mmol/l. In the study of eNOS gene polymorphism in patients with asthma determined the prevalence of pathological mutant homozygotes CC (28,1% of patients) in comparison with control group (6%), and increased the number of their accession obesity (46,2%). Pathological type of homozygotes was found in patients with severe forms of asthma, what, in its turn, was accompanied by a lack of the enzyme eNOS.

DISCUSSION

A decrease of eNOS enzyme can be explained by inhibition of nitric oxide synthesis; nitric oxide effects on endothelial function, and its insufficient intake leads to the formation of endothelial dysfunction. Such changes in the vascular system provide tissue hypoxia of bronho-alveolar complex. In this case, we can say that the presence of abnormal homozygotes (CC) provides the severity of the pathological process and the development of complications of the cardiovascular system.

THE TREATMENT OF HYPERTENSION WITH IRBESARTAN IN THE SPHERE OF CIRCADIAN RHYTHM IN PATIENTS WITH METABOLIC SYNDROME

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BACKGROUND

Metabolic syndrome (MS) is a cluster of common cardiovascular risk factors including hypertension, atherogenic dyslipidaemia, insulin resistance and visceral fat obesity. High blood pressure is considered one of the key features of metabolic syndrome. It is a very prominent feature of the metabolic syndrome, present in up to 85% of patients. Patients with hypertension and the metabolic syndrome have high risk of suffering from future cardiovascular and kidney disease. Angiotensin converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB) are widely used antihypertensives that may improve insulin sensitivity.

PURPOSE

To compare the efficacy of irbesartan with that of losartan and lisinopril in reducing blood pressure (BP) over 24 hrs in patients with metabolic syndrome.

MATERIAL AND METHODS

This prospective and open label study carried out a sample of 54 patients (28 females, 26 males; aged 48–67 years old; mean age 56±8 years old) with hypertension and with MS. At the beginning the BP was monitored by a 24-hr ambulatory blood pressure monitoring (AMBP). Following this, the 54 patients were divided into 3 groups of 18, to each of which was prescribed, respectively, irbesartan, losartan and lisinopril to take for 12 weeks. The drugs were to be taken at 9.00 a.m. Later on the doses were increased. After 12 weeks of therapy, BP was monitored by a 24-hr AMBP.

RESULTS

The use of irbesartan caused a greater reduction of the BP in the final 6–8 hours of the period between the 1st administration of the drug and the next one, these last 6-8 hours being those when cardiovascular and cerebrovascular accidents are more frequent (between 6.00 and 10.00 a.m.).

CONCLUTION

Comparing to losartan and lisinopril, irbesartan results in excellent pressure control during the last 6–8 hours between the 1st administration of the drug and the next one.