

Short Communication

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Correction of endothelial dysfunction under the influence of treatment complex of S (-) Amlodipine and ACE-inhibitor Enalapril in patients with chronic pulmonary heart disease with arterial hypertension

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Abstract

The influence of the complex using of left-turned isomer of the dihydropyridine calcium antagonist S (-) Amlodipine and ACE inhibitor Enalapril on the functional status of vessel endothelium in 65 patients (43 males and 22 females) with chronic pulmonary heart disease (CPHD) and arterial hypertension (AH) was investigated. We established that long-term using of these medicaments has strong decreased of endothelium dysfunction sings. One of the main direction of the endothelial dysfunction in patients with chronic pulmonary heart disease and arterial hypertension is prolonged complex using of calcium antagonist S (-) Amlodipine (Azomex) and ACE inhibitor Enalapril.

Keywords: Emetic toxin, Enterotoxin, Fermented rice noodle.

Introduction

Endothelial dysfunction is the actual problem of modern cardiology and internal medicine. Mala L.T., Korzh A.N., Balkovskaya L.B. have described of the main role of endothelial dysfunction at arterial hypertension and chronic heart failure progression. At other side, the injuring of endothelium due Chronic obstructive lung disease and endothelial dysfunction' development can make of the arterial hypertension and chronic heart failure.¹⁻⁴ The problem of decreasing of the heart failure progression in patients with chronic pulmonary heart after normalization of endothelium function is not studied complete.

The aim of research

To Investigate the influence of the complex using the left-turned isomer of the dihydropyridine calcium antagonist S (-) Amlodipine and ACE inhibitor Enalapril on the functional status of vessel endothelium in patients with chronic pulmonary heart disease (CPHD) and arterial hypertension (AH).

Materials and Methods

65 patients (43 males, 22 females) with CPHD in decompensate stage and AH II-III stages were observed; middle age – 57, 4±3, 8 years. The main group consist of 33 patients, which treated by basic medicines of CPHD with using of S (-) Amlodipine (Azomex, “Actavis”, Island) in dose 5-10 mg per day and Enalapril (Enap. KRKA,

Slovenia) in dose 10-20 mg per day. The control group consists of 32 patients treated by basic medicines with Enalapril. Treatment course was 6 months.

The level of endothelium-depended vasodilatation by functional probes was investigated.⁵ The vasomotor reaction of brachial artery (BA) was observed by linear sensor in 10 MHz by "Logic 500", Germany, during reactive hyperemia (RH) probe. We registered of the maximal speed of bloodstream in BA (V max., cm\sec) and speed of retrograde wave (V min., cm\sec). We investigated of V max and V min after 5 min occlusion of BA and calculated of their increasing percent. The percent of the BA dilatation due answer to RH was calculated.

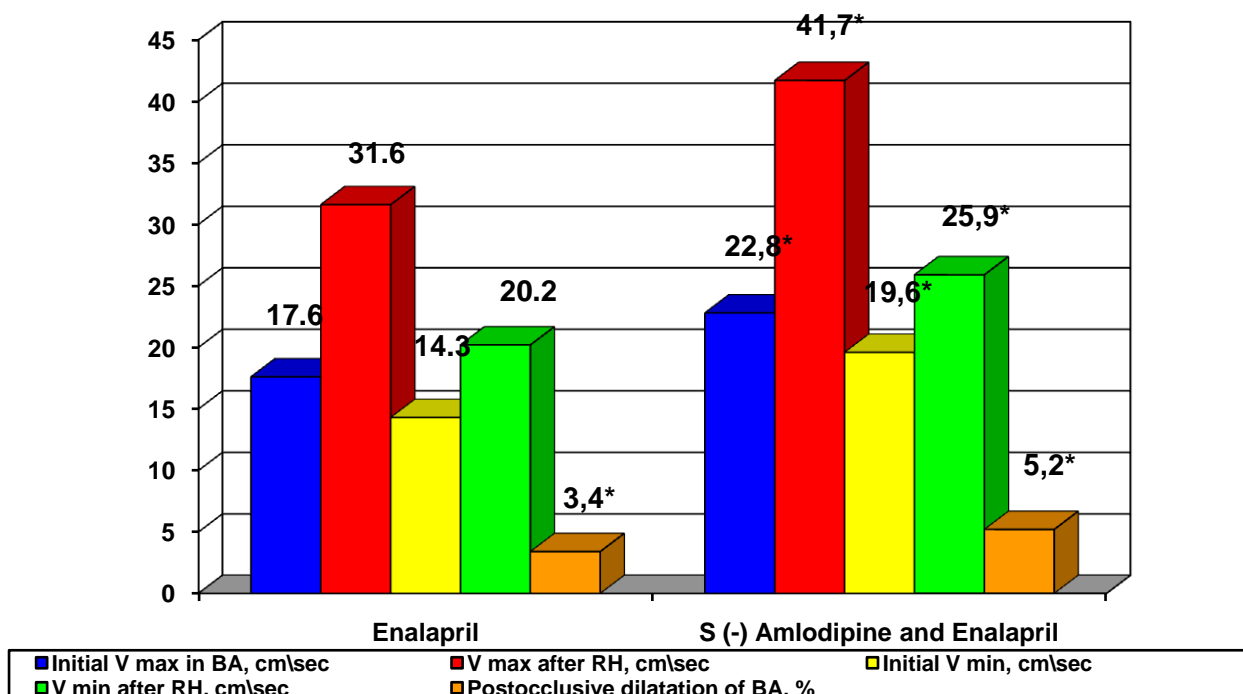
Was determined by ELISA in blood concentration of endothelin-1 (ET-1, pg / ml) using the diagnostic kit of "Peninsula Laboratories" (USA), with the level considered normal ET-1 (1.18 ± 0.23) pg / ml.

Evaluation of endothelial function and ET-1 level was performed at baseline and after 6 months of treatment.

Results

We established (Figure 1), that complex direction of Azomex and Enalapril during 6 months have increased of initial V max in BA on 22,8 cm\sec, V max after RH on 41,7 cm\sec, initial V min on 19,6 cm\sec, after RH – on 25,9 cm\sec and postocclusive dilatation of BA on 5,2% (p<0,05). In the control group after treatment we investigated the less increase of initial V max in BA on 17,6 cm\sec, V max after RH – on 31,6 cm\sec, initial V min – on 14,3 cm\sec, V min after RH – on 20,2 cm\sec and postocclusive dilatation only on 3,4% (p<0,05).

Analysis of the level in the blood vasoconstrictor ET-1 allowed to state that the main group after 6 months of treatment, there has been a decline in the blood levels of ET-1 (3,86 ± 0,24) pg / ml to (1,95 ± 0,19) mg / ml (p <0,05). At the same time, reduced ET-1 in the control group were less pronounced - with (3,32 ± 0,27) pg / ml and (1,83 ± 0,21) pg / ml (p <0,05) .



Note: * p<0,05 – authenticity between groups

Figure1: The changes of endothelium-depended vasodilatation after 6 months complex using of calcium antagonist S (-) Amlodipine and ACE-inhibitor Enalapril.

Conclusion

One of the main direction of the endothelial dysfunction in patients with chronic pulmonary heart disease and arterial hypertension is prolonged complex using of calcium antagonist S (-) Amlodipine (Azomex) and ACE-inhibitor Enalapril.

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