



Pleiotropic effects of angiotensin-converting enzyme inhibitors in normotensive patients with coronary artery disease

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Abstract:

Angiotensin-converting enzyme inhibitors proved to be effective in the primary and secondary prevention of cardiovascular diseases. Clinical effectiveness of this group of agents may largely depend on their pleiotropic effects. The purpose of this study was to compare the effects of plasma- and tissue-type angiotensin-converting enzyme inhibitors on blood pressure and on systemic inflammation, hemostasis and oxidative functions in normotensive patients with stable coronary artery disease.

Ninety patients with stable coronary artery disease enrolled into the study were randomly divided into three different groups, simultaneously treated with enalapril (20 mg/d, n = 30), perindopril (4 mg/d, n = 30) or placebo (n = 30). Plasma lipid profile and the levels of oxidized low density lipoproteins (LDLs), monocyte chemoattractant protein (MCP)-1, interleukin-10, C-reactive protein (CRP), fibrinogen and plasminogen activator inhibitor (PAI)-1 were determined at the beginning of the study and after 30 and 90 days of treatment. Seventy-six patients completed the trial.

Neither enalapril nor perindopril affected blood pressure or plasma lipids. Perindopril significantly reduced plasma levels of oxidized LDLs, CRP, MCP-1, fibrinogen and PAI-1, and increased interleukin-10. The effect of enalapril on these markers of systemic inflammation, hemostasis and oxidative functions was much less pronounced.

The results showed that enalapril and perindopril were devoid of a blood pressure-lowering effect in normotensive patients with stable coronary artery disease. Perindopril was superior to enalapril in exhibiting antioxidant, antithrombotic and profibrinolytic activities. The treatment-induced changes in the balance between pro- and antiinflammatory cytokines and in hemostasis may contribute to the clinical effectiveness of tissue angiotensin-converting enzyme inhibitors in the therapy of atherosclerosis-related disorders.

Key words:

angiotensin-converting enzyme inhibitors, coronary artery disease, cytokines, hemostasis, risk factors
