Plasma concentrations of adhesion molecules and chemokines in patients with essential hypertension

Andrzej Madej, Bogusław Okopień, Jan Kowalski, Maciej Haberca, Zbigniew S. Herman

Department of Clinical Pharmacology, Silesian University School of Medicine, Medyków 16, PL-40-752 Katowice, Poland

Correspondence: Andrzej Madej, e-mail: andrzej.madej@o2.pl

Abstract:
Arterial hypertension vascular injury results in serious complications, such as left-ventricular hypertrophy and myocardial failure, ischemic heart disease and cerebral stroke. Currently, it is well known that inflammatory factors play a significant role in the mechanisms that trigger and enhance the remodeling of the vascular wall. A number of data suggest an important role of adhesion molecules and chemokines in this process. The aim of this study was measuring the plasma levels of soluble Intercellular Adhesion Molecule 1 (sICAM-1) and Monocyte Chemoattractant Peptide 1 (MCP-1) in patients with essential hypertension vs. healthy volunteers by ELISA method (R&D kits). sICAM-1 and MCP-1 levels were significantly higher in hypertensive patients compared to controls (sICAM-1: 279.2 ± 8.8 ng/ml vs. 224.4 ± 1.8 ng/ml; p < 0.001; MCP-1: 142.2 ± 7 pg/ml vs. 95.4 ± 36 pg/ml; p < 0.0001). Our results indicate that arterial hypertension alone (without inflammation, lipid and carbohydrate disorders) may increase the expression of these cytokines and contribute to the progression of endothelial injury.

Key words:
Intercellular Adhesion Molecule 1, Monocyte Chemoattractant Peptide 1, essential hypertension, endothelium