



Atorvastatin and fenofibric acid differentially affect the release of adipokines in the visceral and subcutaneous cultures of adipocytes that were obtained from patients with and without mixed dyslipidemia

Krzysztof Łabuzek¹, Łukasz Bułdak¹, Anna Duława-Bułdak²,
Anna Bielecka¹, Robert Krysiak¹, Andrzej Madej³, Bogusław Okopień¹

¹Department of Internal Medicine and Clinical Pharmacology, Medical University of Silesia, Medyków 18,
PL 40-752 Katowice, Poland

²Department of Anaesthesiology and Intensive Therapy, Medical University of Silesia, Medyków 14,
PL 40-752 Katowice, Poland

³Health Care Department, Chair of Women's Health, Medical University of Silesia, Medyków 12,
PL 40-752 Katowice, Poland

Correspondence: Krzysztof Łabuzek, e-mail: labuzek@labuzek.com

Abstract:

In this study, we compared the effects of atorvastatin and fenofibric acid, which were administered alone or in combination, on the secretory function of human adipocytes that were obtained from the visceral and subcutaneous adipose tissues of 19 mixed dyslipidemic patients and 19 subjects with a normal lipid profile.

The adipocytes were incubated *in vitro* in the presence of atorvastatin and/or fenofibric acid. The secretory function of the cells was determined using ELISA assays.

The visceral adipocytes released significantly more adiponectin and IL-6 and less PAI-1 than those that were obtained from subcutaneous tissue. The levels and patterns of adipokine release differed between the patients with or without lipid abnormalities and between the adipocytes that were obtained from visceral or subcutaneous adipose tissue. The culture that contained hypolipidemic drugs resulted in the significant changes of the release of adipokines. The effects of atorvastatin and fenofibric acid on the hormonal function of human adipocytes may be, in part, responsible for the clinical efficacy of these drugs in the prevention and treatment of dyslipidemia-related cardiovascular and metabolic disorders. The study supports the concept that the pleiotropic effects of fenofibrate and atorvastatin may be, in part, a result of their impact on the secretory function of adipocytes.

Key words:

adipokines, adipocytes, preadipocytes, hypolipidemic agents, pleiotropic effects
