



Atorvastatin reduces pro-inflammatory markers in hypercholesterolemia patients

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Abstract

Background: Reduction in cardiovascular events with statins has been in part attributed to their anti-inflammatory properties.

Objective: Evaluate the effects of atorvastatin on levels of inflammatory markers, such as tumour necrosis factor- (TNF), interleukins (IL-1 and IL-6), soluble intercellular adhesion molecule-1 (sICAM-1) and C-reactive protein (CRP) in hypercholesterolemia patients (LDL-cholesterol >160 mg/dL).

Methods & Results: Two lipid-lowering regimens were taken for 8 weeks. One set of patients (n = 45, 26 men, average 50 ± 2 years of age) was subjected to atorvastatin treatment (20–40 mg/day), plus diet recommendation. Another set of patients (n = 23, 12 men, average 53 ± 3 years of age) went through diet recommendation alone. Both groups were recommended to perform standard physical activity. Plasma samples were collected after overnight fasting at baseline and after 8 weeks for ELISA. The use of atorvastatin when compared to diet alone, resulted in significant ($P < 0.0001$) reductions for: LDL-cholesterol (39.9% versus 4.4%), TNF (21.4% versus 2.9%), IL-6 (22.1% versus 2.0%), IL-1 (16.4% versus 2.7%) and sICAM-1 (9.6% versus 0.1%), respectively. The percentage of patients with CRP levels >3 mg/dL in the atorvastatin group fell from 25.0 to 6.7% ($P < 0.0001$) while in the diet group the reduction was not significant.

Conclusion: In hypercholesterolemia patients, atorvastatin, compared to diet alone resulted in significant reductions in levels of pro-inflammatory cytokines (TNF, IL-1 and IL-6) as well as in sICAM-1 and CRP. Thus, statin-induced inhibition of inflammatory markers may play an important role in the pharmacological and clinical effects of statins seen in cardiovascular diseases.

Biography

Elia Ascer, MD has completed his PhD at the age of 40 years in University of Sao Paulo, Brazil. He is the Professor of Post-Graduation in Cardiology for Masters and PhD students in Hospital Beneficencia Portuguesa of Sao Paulo. He has over 100 publications that have been cited over 500 times, and has been serving as an editorial board member of reputed journals.

