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Atorvastatin treatment modulates the interaction between leptin and adiponectin, and the clinical parameters in patients with type II diabetes

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Abstract: The aim of this study was to examine the effect of atorvastatin treatment on levels of leptin , adiponectin and insulin resistance, and their correlation with clinical parameters, in patients with type II diabetes. Patients with diabetes (n=394) were divided into two groups, comprising 161 patients who received 20 mg/day atorvastatin (statin group), and 233 patients who did not receive statins (statin-free group). The results showed that atorvastatin treatment of patients with diabetes was not associated with changes in leptin, adiponectin, the leptin/adiponectin (L/A) ratio or homeostasis model assessment-insulin resistance (HOMA-IR). However, low-density lipoprotein cholesterol (LDL-C), triglycerides (TG) and total cholesterol (Tchol) were positively correlated with leptin and L/A ratio in the statin group only (P<0.05). By contrast, high-density lipoprotein cholesterol (HDL-C) showed a significant positive correlation with adiponectin in the statin and statin-free groups (P<0.05). Additionally, a positive correlation was found between HOMA-IR and glycated hemoglobin (HbA1c), and TG, in both groups, whereas Tchol was positively correlated with HOMA-IR in the statin group only (P<0.05). When multivariate analysis was performed with HOMA-IR as the dependent variable, and with adjustment for age, body mass index (BMI) and waist circumference, HbA1c was found to be a significant predictor of HOMA-IR or insulin resistance. In conclusion, atorvastatin treatment may have several effects on the interaction between leptin and adiponectin, and on clinical parameters in patients with type II diabetes.