

COMPARATIVE EFFECT OF APHERESIS vs ATORVASTATIN/APHERESIS ON MARKERS OF INFLAMMATION IN PATIENTS WITH FAMILIAL HYPERCHOLESTEROLEMIA

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Objective: Patients with Familial Hypercholesterolemia (FH) have increased cardiovascular events. Clinical trials have demonstrated that lowering circulating lipid levels by LDL-apheresis has beneficial effects on prognosis. However, whether apheresis vascular effects in FH are related to modulation of pro- and anti-inflammatory cytokines, and whether the combination of apheresis with atorvastatin is able to enhance the putative anti-inflammatory effect of apheresis remains unknown. We examined, in an intra-patient study, the effect of atorvastatin/apheresis vs. apheresis alone on the releasing of circulating pro- and anti-inflammatory markers.

Methods: 9 heterozygous patients (56 ± 11 years) with FH (mean cholesterol 385 ± 42 mg/dL) were treated with apheresis alone and afterwards with apheresis plus atorvastatin 40 mg/d. Lipid profiles, serum C-reactive protein, CK, GOT, GGT, the anti-inflammatory markers IL-4 and IL-10 and the pro-inflammatory markers $\text{INF}\gamma$ and IL-6 were determined before and at 2, 4, 6 and 8 days after apheresis and atorvastatin/apheresis.

Results: Treatment with atorvastatin/apheresis significantly reduced lipid profile more than LDL-apheresis alone at each scheduled time. When compared to apheresis alone, combined treatment statistically decreased cholesterol by more than 25-35% at all times and relatively increased IL-4 concentration. The levels of cholesterol in atorvastatin/apheresis patients were inversely correlated with those of IL-4 and IL-10 and positively correlated with $\text{INF}\gamma$.

Conclusion: The combination of atorvastatin with LDL-apheresis decreased serum cholesterol levels more than apheresis alone. Apheresis had an anti-inflammatory effect and the effect of the drug reducing cholesterol levels affects the balance between pro- and anti-inflammatory cytokines in favor of anti-inflammation contribute.