

## **Acute infection with Epstein-Barr virus is associated with atherogenic lipid changes.**

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### **Abstract**

#### **OBJECTIVE:**

To evaluate the effects of acute infection with Epstein-Barr virus (infectious mononucleosis, IM) on lipids and lipoproteins.

#### **METHODS:**

Fasting serum levels of total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), triglycerides (TGs), apolipoproteins (apo) A-I, B, E, C-II, C-III and lipoprotein (a) [Lp(a)] were determined in patients with IM on diagnosis and 4 months after the resolution of febrile illness and in age- and sex-matched controls. Activities of cholesteryl-ester transfer protein (CETP), lipoprotein-associated phospholipase A2 (Lp-PLA2) and paraoxonase 1 (PON1) as well as levels of several cytokines were determined. LDL subclass analysis was performed with the Lipoprint LDL System.

#### **RESULTS:**

Twenty-nine patients (16 males, aged  $24.3 \pm 14.6$  years) and 30 controls were included. TC, HDL-C, LDL-C, apoA-I, apoB, apoC-III and Lp(a) levels were lower at baseline whereas apoB/apoA-I ratio, TG levels and CETP activity were elevated compared with 4 months later. At baseline, higher levels in cytokines and the cholesterol concentration of small-dense LDL particles (sdLDL-C) were noticed, whereas LDL particle size was lower compared with follow-up. Activities of Lp-PLA2 and PON1 were similar at baseline and 4 months later. Four months after the resolution of IM levels of TGs, apoE, apoC-III, Lp(a), sdLDL-C and cytokines as well as LDL particle size, apoB/apoA-I ratio, CETP and Lp-PLA2 activities were similar to controls. PON1 activities both at baseline and 4 months later were lower in patients compared with controls.

#### **CONCLUSIONS:**

IM is associated with atherogenic changes of lipids and lipoproteins that are partially restored 4 months after its resolution.