Evaluation Of Serum Cholesterol Efflux Capacity In Diabetic Compared To Healthy Subjects

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HDL provide cardiovascular protection by promoting reverse cholesterol transport (RCT). Efflux of cell cholesterol to HDL, the first step of RCT, can occur through aqueous diffusion, SR-BI, ABCG1 and ABCA1. Serum cholesterol efflux capacity (CEC), an index of HDL functionality, depends of HDL levels but is also strictly related to HDL composition. **Objectives:** to measure serum CEC in patients with diabetic dyslipidemia (DD) (n=116) and in apparently healthy control subjects (HS) (n=94) and to correlate serum CEC with preclinical atherosclerosis (IMT). **Results:** ABCA1-mediated CEC was higher in DD than in HS (4.879±1.19% vs. 3.565±1.07%; $p<0.001$). ABCA1 serum CEC showed a borderline significant inverse correlation with IMT in HS ($r=-0.0296$; $p=0.078$); on the other hand, a positive association between ABCA1-mediated CEC and IMT was found in DD patients ($r=0.2363$; $p=0.047$). After adjustment for lipoprotein-related parameters, the inverse correlation between ABCA1-mediated CEC and IMT in HS became stronger ($r=-0.0353$; $p=0.053$), while the positive association between ABCA1-mediated CEC and IMT in DD patients was lost ($r=0.0169$; $p=0.141$). Moreover preliminary results suggest an inverse association between TG levels and ABCA1-mediated CEC in DD patients but not in HS. **Conclusions:** the inverse relationship between ABCA1-mediated CEC and a surrogate marker of atherosclerosis found in healthy subjects, resulted entirely reversed in diabetic patients, possibly due to modification in lipoprotein composition. The clinical relevance of this finding needs further investigation.