Anti Inflammatory Effects of HDL Against LDL Oxidation in Post and and Premenopausal Women

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Introduction: Epidemiological studies indicate that HDL cholesterol levels are among the most predictive of risk factors for cardiovascular events. HDL contains components which protect LDL against oxidation. It has been postulated that this ability of HDL to protect LDL against oxidation may be as important in its antiinflamamatory, antiatherogenic role as is reverse cholesterol effluxs. İn some studies HDL is dysfunctional because fails to prevent the formation of biologically active LDL-derived oxidized phospholipids and in many instances behave proinflammatory because enhances formation of biologically active oxidized phospholipids. Because of this effect we investigated function of HDL against LDL oxidation in pre and postmenopausal women who have normal HDL levels (≥50mg/dl).

Methods: 22 postmenopausal, 20 premenopausal and 26 healthy women which have normal HDL levels (≥50mg/dl) were included in this study. Serum HDLs were isolated by centrifugation and LDL isolated from serum pool (50 μg/ml) were added to tubes for interaction with healthy, premenopausal and postmenopausal women HDLs (10 μg/ml) and incubated for an hour. Then an oxidizing agent, DCFH added tubes to monitor the ability of the individual's HDL to prevent oxidation of normal LDL. Fluoresance Units > 1.0 after the addition of HDL indicated pro inflammatory HDL; values < 1.0 indicated anti inflammatory HDL. Total-C, TG, HDL-C, LDL-C, Apo A, Apo B, hsCRP, Lp (a) and homocystein levels were also measured in our laboratory using routine standart methods.

Results: As a result post-menopausal women (n=16) had more proinflammatory HDL than premenopausal (n=5) and healthy women (n=3) ($p<0,05$ for both). But difference between pre menopausal and healthy women's values weren't significant.

Conclusions: In conclusion, whether the serum HDL levels of post menopausal women was normal, they lost their anti-inflammatory functions. This may be due to decreased estrogen levels in post menopausal period which in turn increase the cardiovascular event risk in this women.