Abstract: P1680

High density lipoprotein cholesterol (HDL-C) levels and endothelial glycocalyx integrity in treated hypertensive patients

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Topic(s):
Target Organ Damage/ Left Ventricular Hypertrophy

Citation:
Background: Endothelial dysfunction indicates target organ damage in hypertensive patients. The integrity of endothelial glycocalyx (EG) plays a vital role in vascular permeability, inflammation and elasticity and finally to cardiovascular disease. We aimed to investigate the role of increased HDL cholesterol levels (HDL-C), which usually are considered protective against cardiovascular disease, in EG integrity in older hypertensive patients.

Methods: We studied 120 treated hypertensive patients older than 50 years were divided regarding HDL-C tertiles in group HDLH, (HDL-C >71 mg/dl, upper HDL-C tertile) and group HDLL, (HDL-C <71 mg/dl, two lower HDL-C tertiles). Increased perfusion boundary region (PBR) of the sublingual arterial microvessels (ranged from 5-9 micrometers) using Sideview Darkfield imaging was measured as a non-invasive accurate index of reduced EG thickness.

Results: PBR 5-9 was significantly decreased in group HDLH (p=0.04). In the whole population, HDL-C was inversely but moderately related with PBR 5-9 (r= -0.22, p= 0.01). In a multiple linear regression analysis model, using age, BMI, smoking habit, HDL-C, LDL-C and office SBP, as independent variables, we found that BMI (Beta =0.25, p = 0.006) independently predicted PBR 5-9 in the whole population. Conclusions: In older hypertensive patients, HDL-C ranged between 71-101 mg/dl might moderately protect EG and subsequently endothelial function. Future studies in several groups of low or high risk hypertensives are needed in order to evaluate the beneficial role of extremely elevated HDL-C regarding cardiovascular risk evaluation as well as endothelial glycocalyx as a novel index of target organ damage in essential hypertension.

Differences in mean endothelial glycocalyx PBR 5-9 regarding HDL levels in hypertensive patients

![Diagram showing differences in PBR 5-9 across different HDL levels](image-url)