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Lipoprotein profile, lipoprotein-associated phospholipase A2 and cardiovascular risk in hemodialysis patients.

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Abstract

BACKGROUND:

Cardiovascular disease is the leading cause of morbidity and mortality in hemodialysis patients; the increased risk of cardiovascular disease is due to accelerated atherosclerosis, inflammation and impaired lipoprotein metabolism. We aimed to evaluate lipoprotein-associated phospholipase A_2 (Lp-PLA_2) and some pro-inflammatory aspects of the lipoprotein profile in dialyzed patients in order to evaluate the relationship with the accelerated atherosclerosis and vascular accidents.

METHODS:

In 102 dialysis patients and 40 non-uremic controls, we investigated the lipoprotein plasma profile, high sensitivity C-reactive protein (CRP), ceruloplasmin and serum amyloid A protein (SAA), and followed patients for 1 year to analyze the risk of acute cardiovascular events.

RESULTS:

Total cholesterol, low-density lipoprotein and high-density lipoprotein plasma levels were significantly lower in uremic patients than controls, whereas CRP, SAA, ceruloplasmin, Lp-PLA_2 and their ratio with apolipoprotein A1 were significantly higher. Patients with Lp-PLA_2 levels >194 nmol/min/ml had more acute cardiovascular events than patients with lower values.

CONCLUSION:

Our results show that in dialysis subjects: (1) low-density lipoproteins show a more atherogenic phenotype than in the general population; (2) high-density lipoproteins are less anti-inflammatory; (3) Lp-PLA_2 could potentially be used to evaluate cardiovascular risk.

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