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Effects of α-linolenic acid supplementation on hemostatic factors and Lp-PLA2 activities in non-diabetic and hypercholesterolemic subjects

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The aim of this study was to evaluate whether supplementation of α-linolenic acid (ALA) in perilla oil influences cardiovascular disease risk factors, including cholesterols, hemostatic factors, lipoprotein-associated phospholipase A2 (Lp-PLA2), and the relationship among them. Eighty-five (85) non-diabetic, borderline hypercholesterolemic subjects were divided into ALA group (n=42) and placebo group (n=43). At 8 weeks follow up, the ALA group showed significant increases in plasma ALA, and reductions in total- and LDL-cholesterol, Lp-PLA2 activity, and activated partial thromboplastin time (aPTT) compared to baseline. In the ALA group, the changed value from baseline were significantly greater in total- and LDL-cholesterol, oxidized LDL, apolipoprotein B, Lp-PLA2 activity, plasma ALA, aPTT and collagen-epinephrine closure time (C-EPI CT) than the placebo group before and after adjusting for baseline values. Changes in C-EPI CT were positively correlated with changes in plasma ALA, and changes in aPTT were negatively correlated with changes in Lp-PLA2. In this study, we found that ALA supplementation contributes to prolongation of C-EPI CT and aPTT and reductions of cholesterol levels and Lp-PLA2 activity, and these alterations could possibly be mediated by decreasing LDL-cholesterol oxidation, thereby reducing substrate available for Lp-PLA2.

Biography

Minkyung Kim has completed her PhD from Yonsei University. She is currently a Post-doctoral candidate in Research Center for Silver Science, Institute of Symbiotic Life-TECH, Yonsei University, with Professor Jong Ho Lee. She has published 6 papers in reputed journals and applied 3 patents.

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