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# 582 - ASSOCIATION OF PLASMA AND DIETARY LIPIDS WITH ATRIAL TACHYARRHYTHMIA RECURRENCE: THE PREDIMAR TRIAL

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## Resumen

Background/Objectives: Anti-arrhythmic properties have been attributed to several lipids. However, as far as we know, no previous studies have examined the association between a broad lipid profile and the risk of atrial tachyarrhythmia recurrence (TAR). We aimed to analyze the association of both plasma lipid levels and dietary fat intake with the risk of TAR after 18 months of follow-up in patients undergoing catheter ablation in the PREDIMAR (PRevención con DIeta Mediterránea de Arritmias Recurrentes) trial.

Methods: A case-cohort design (212 incident cases of TAR and a randomly selected sub-cohort of 238 participants) nested within the PREDIMAR trial was conducted. Nuclear magnetic resonance-derived plasma lipids and dietary fat intake assessed by a food frequency questionnaire were determined at baseline and at year 1. Values were normalized and scaled to multiples of 1 SD. Cox regression models were used to analyze the association of 1) baseline blood lipid levels and dietary fat intake and 2) 1-year changes in plasma lipids and dietary fat intake with the subsequent risk of TAR.

Results: After FDR p-value correction, higher plasma glycerophospholipids and phosphatidylcholine levels at baseline were significantly associated with increased TAR risk (HR per 1 SD 1.24, 95%CI 1.07;1.43, and HR per 1 SD 1.29, 95%CI 1.10;1.51, respectively). The 1-year increase in plasma polyunsaturated fatty acids (PUFAs) and omega-3 was associated with a reduced TAR risk (HR per 1 SD 0.44, 95%CI 0.25;0.77, and HR per 1 SD 0.48, 95%CI 0.28;0.81, respectively). Regarding baseline dietary fat intake, inverse associations were observed for total omega-3 (HR per 1 SD 0.76, 95%CI 0.65;0.88), and linolenic acid (HR per 1 SD 0.77, 95%CI 0.66;0.90) intake, and nut consumption (HR per 1 SD 0.75, 95%CI 0.65;0.87). Moreover, 1-year increases in PUFAs, monounsaturated fatty acids, omega-6+7, omega-9, and linoleic acid intake, and olive oil and nut consumption were associated with reduced TAR risk, whereas increases in arachidonic acid intake were associated with a higher risk. Correlations between plasma lipids and dietary fat intake were consistently low.

Conclusions/Recommendations: Plasma and dietary lipids were associated with TAR risk and provide complementary information, with plasma phospholipids showing a direct association, whereas dietary and omega-3 plasma concentrations show an inverse association.