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## Omega-3 fatty acids and Malignant Ventricular Arrhythmias in patients with implantable cardioverter defibrillator

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**Aim:** Studies that evaluated the effects of omega-3 polyunsaturated fatty acids (n-3) on cardiovascular diseases have yielded conflicting results. We aimed at examining the association between plant/marine n-3 and Malignant Ventricular Arrhythmias (MVA) among patients benefiting from the best preventive strategy including Implantable Cardioverter Defibrillator (ICD).

**Method:** Consecutive patients to whom an ICD was implanted for primary or secondary prevention of MVA were eligible. All patients had blood fatty acid analysis. The method of Kaplan-Meier was used to estimate the survival curves in each quartile of the main plant (ALA) and marine (EPA and DHA) n-3.

**Results:** Among the 238 enrolled patients, 100 had a relevant endpoint recorded by the ICD or died from a cardiac cause during a mean follow-up of 30±12 months. No significant difference in MVA was observed between quartiles of ALA (log-rank test p=0.88), EPA (log-rank test p=0.58) and DHA (log-rank test p=0.97). In a multivariate cox proportional hazard model including age, sex, ischemic heart disease, diabetes, smoking, hypertension and high cholesterol as covariates, we found no association between MVA and n-3: hazard ratio was 1.12 (95% CI 0.62-2.02) for ALA and 1.44 (95% CI 0.81-2.58) for the sum of main marine n-3.

**Conclusions:** Plant and marine n-3 do not seem to either increase or decrease the risk of MVA in patients who are not n-3 deficient and benefit from the most effective preventive treatment. Further studies are required to test whether n-3 deficient patients would still benefit from n-3 supplements. Finally, these data raise major questions regarding interactions between dietary n-3 and certain medications.

### Biography

Sabrina Zeghichi-Hamri is an Associate Professor at Bejaia University, Algeria. She completed her PhD in Physiology, Physiopathology and Pharmacology from Grenoble University, France and MSc in Food Quality Management from Mediterranean Agronomic Institute of Chania, Crete (Greece). She is a Researcher in Department of Cardiology at Grenoble University Hospital. Her project was to study the effects of Omega-3 fatty acids on malignant ventricular arrhythmias in rats and in patients with implantable cardioverter defibrillator. Currently, she is working on "Phytochemicals and their antioxidant activities and their effects in prevention of chronic diseases" in Laboratory of Biomathematics, Biochemistry, Biophysics and Scientometrics at Bejaia University.

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