Antiarrhythmic Effects of Omega-3 Fatty Acids

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Fish oil, and omega-3 fatty acids in particular, have been found to reduce plasma levels of triglycerides and increase levels of high-density lipoprotein in patients with marked hypertriglyceridemia, and a pharmaceutical-grade preparation has recently received approval from the US Food and Drug Administration to market for this purpose. However, in both bench research studies and clinical trials, evidence for clinically significant antiarrhythmic properties has also been detected in association with omega-3 fatty acid intake. Arguably the most significant finding in this data set was the reduction in the incidence of sudden death in survivors of myocardial infarction in the Gruppo Italiano per lo Studio della Sopravvivenza nell’Infarto Miocardico (GISSI)–Prevenzione trial and the subsequent recommendation for administration of fish oil as part of the postinfarction regimen in Europe. This article reviews in detail the basic and clinical research studies of fish oil as an antiarrhythmic entity, the forms of preparation and/or administration that appear to possess these properties and those that do not, the types of arrhythmias (ventricular ectopy and atrial fibrillation as well as ventricular tachyarrhythmias) that have been beneficially affected by fish oil administration, and the presumed and known mechanisms by which the beneficial actions are exerted.

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