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Effect of Dietary n-3 Polyunsaturated Fatty Acids on the Inducibility of Ventricular Tachycardia in Patients With Ischemic Cardiomyopathy

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Increased consumption of fish and/or fish oil was associated with decreased risk of sudden cardiac death (SCD). The study aim was to evaluate the antiarrhythmic effect of dietary fish oil on the inducibility of ventricular tachycardia (VT) at high risk of SCD. Patients with coronary artery disease undergoing defibrillator implantation were recruited if sustained monomorphic VT could be induced by programmed extra stimuli at 2 cycle lengths. After the initial study, 12 patients consumed 3 g/d of encapsulated fish oil for approximately 6 weeks before a repeated electrophysiologic study. To control for fluctuations in the inducibility of VT, an additional 14 patients with no dietary manipulation were also studied. Aggressiveness of stimulation required to induce VT was ranked from least aggressive to most aggressive based on cycle length and number of extra stimuli, with noninducibility ranked highest. At the repeated electrophysiologic study, in the fish-oil group, 42% had no inducible VT, 42% required more aggressive stimulation to induce VT, 8% required identical stimulation, and 8% required less stimulation compared with 7%, 36%, 36%, and 21% in the control group, respectively. Overall, there was a change to noninducible or less inducible VT in the fish-oil group, but no change in the control group ($p = 0.003$ and $p = 0.65$, respectively; Wilcoxon's sign-rank test). In conclusion, dietary n-3 fatty acid supplementation decreased the inducibility of VT in patients at risk of SCD. These findings suggest that dietary fish oil can have an antiarrhythmic effect.

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