Reference:

Fish-Oil Supplementation in Patients with Implantable Cardioverter Defibrillators: A Meta-Analysis


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Summary:

Selected heart patients at significant risk for potentially life-threatening cardiac problems including arrhythmias are inserted with implantable cardioverter defibrillators (ICD units). Patients with ICDs at considerable risk for fatal ventricular arrhythmias have been utilized in a small number of clinical trials where daily supplementation with DHA/EPA (from fish oil) as compared to placebo (control) have been conducted for periods of one or two years in duration. The present authors reviewed (via meta-analysis) the overall findings from the three studies as reviewed which fulfilled appropriate criteria for analysis. The daily dose levels of DHA/EPA (combined) were 2000 mg, 1300 mg and 900 mg. All studies included in the present analysis were considered to be of high quality by appropriate standards for randomized clinical trials.

The relative risk of adverse effects of DHA/EPA omega-3 therapeutics showed a relative risk of 0.74 (26% reduction), 1.24 (24% higher risk), and 0.90 (10% lower risk) for an overall assessment yielding a relative risk of 0.93 (7% below unity) leading to the final conclusion of no overall benefit of DHA/EPA omega-3 supplementation from fish oil in such patients. When the authors performed a meta-analysis of all-cause mortality from these three studies of fish oil supplementation (patients with ICD units), considerable heterogeneity between studies was again observed and the overall relative risk from the combined studies was 0.70 (30% below
Fish Oil Supplementation in Patients with Defibrillators
Friday, 25 January 2008 11:58

unity) which was deemed to be statistically insignificant. The authors concluded that ‘At present, the use of fish oils in patients with implantable cardioverter defibrillators appears to warrant caution’.

Dr. Holub’s Comments:

It has been known for some time (as confirmed in the present review) that considerable variability in the overall effects of supplementation with fish oil enriched in DHA/EPA is observed between trials and particularly across individual patients having implanted defibrillators. This has led to the general conclusion that further studies are needed to evaluate the potential benefits/risks in patients on such units before any general strategy regarding supplementation can be recommended in the clinical community. For the vast majority of patients with coronary heart disease not on defibrillators, the American Heart Association has recommended 900 mg-1000 mg DHA/EPA combined per day. This is based partly on the GISSI study with fish oil supplementation that indicated a 30% and 45% reduction in cardiovascular disease-mortality in sudden cardiac deaths, respectively.

This recent review in the Canadian Medical Association Journal resulted in an article in the Globe and Mail (Tuesday, January 15th, (Toronto)) on page L-4 entitled ‘Benefits of Fish Oil May Be Overblown’. It is rather unfortunate that the specific patient population (those on ICD units addressed in the review by Jenkins et al.) did not get translated clearly into the title of the newspaper article. Comments regarding caution in taking omega-3 supplements from fish oil and others were included in the article without referring to patients with ICD units specifically.

It should also be pointed out that reviews of the many studies on fish consumption and mortality from cardiovascular disease have indicated that at least 5 servings of fish per week appear to reduce cardiac mortality by approximately 40%. In this regard, it is no noted 5 fatty fish servings per week corresponds to approximately 650-700 mg of DHA/EPA daily. The average daily consumption amongst adults in North America for DHA/EPA (combined) is approximately 120-140 mg which is only a fraction of average intakes reported for male adults in Japan (approximately 850 mg/day). The highest intakes of DHA/EPA (combined) are in Northern Quebec (amongst the Inuit) where the average is approximately 2100 mg/day. For the general public in the US, the Food and Drug Administration have indicated that up to 3000 mg DHA/EPA (combined) is considerably generally safe for most people with up to 2000 mg/day coming from supplementation and the remaining 1000 mg/day from food sources (such would include fish/seafood and foods/functional foods containing DHA/EPA) The overall question for the clinical community as to whether supplementation with higher doses of DHA/EPA or not in patients implanted with defibrillators is likely to be beneficial remains unanswered at present.
until future randomized controlled clinical trials are performed and subjected to peer-review for publication in highly reputable medical/nutrition journals.