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A meta-analytic review of double-blind, placebo-controlled trials of antidepressant efficacy of omega-3 fatty acids.

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Abstract

OBJECTIVE: Evidence has indicated an association between depression and low dietary intake of omega-3 polyunsaturated fatty acids (PUFAs). However, clinical trials examining the therapeutic benefit of omega-3 PUFAs in depression showed inconsistent results. The goal of this study is to systematically evaluate the antidepressant efficacy of omega-3 PUFAs by using meta-analytic method.

DATA SOURCES: MEDLINE, Embase, and PsycINFO databases were searched from 1966 through August 2006 using the key words (depression OR depressive disorder OR mood disorder) AND (omega-3 OR EPA OR DHA OR poly-unsaturated fatty acid OR fish oil). The search was limited to literature in English and clinical trials.

STUDY SELECTION: Ten double-blind, placebo-controlled studies in patients with mood disorders receiving omega-3 PUFAs with the treatment period lasting 4 weeks or longer were included.

DATA EXTRACTION: Effect size (ES) of each individual study was derived by computing the standardized mean difference. A random-effects model was used to pool the ESs of all included studies.

DATA SYNTHESIS: When pooling the results of 10 included studies (N = 329), we found a significant antidepressant effect of omega-3 PUFAs (ES = 0.61, p = .003). Likewise, omega-3 PUFAs significantly improved depression in patients with clearly defined depression (ES = 0.69, p = .002) or with bipolar disorder (ES = 0.69, p = .0009). The dosage of eicosapentaenoic acid (EPA) did not change the antidepressant efficacy significantly. However, significant heterogeneity among these studies and publication bias were noted.

CONCLUSIONS: Although our meta-analysis showed significant antidepressant efficacy of omega-3 PUFAs, it is still premature to validate this finding due to publication bias and heterogeneity. More large-scale, well-controlled trials are needed to find out the favorable target subjects, therapeutic dose of EPA, and the composition of omega-3 PUFAs in treating depression.

Comment in

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